

BASRAH MODERN SLAUGHTERHOUSE BASRAH, IRAQ



**SIGIR PA-09-189
APRIL 27, 2010**

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SIGIR

Special Inspector General for Iraq Reconstruction

April 27, 2010

Summary of Report: PA-09-189

Why SIGIR Did this Study

SIGIR is charged to conduct assessments of Iraq reconstruction projects funded with amounts appropriated or made available by the U.S. Congress. SIGIR assessed this project to provide real-time information to enable appropriate action, when warranted.

The objective of this project assessment was to determine if:

- project components were adequately designed
- construction complied with design standards
- adequate quality management programs were used
- project sustainability was addressed
- project results were consistent with original objectives

What SIGIR Recommends

SIGIR recommended that the:

Commander, Gulf Region District (GRD):

1. Resolve the design deficiencies, omissions, and areas of concern with the contractor to guarantee that the project is adequately designed.
2. Perform a review of the contract file to ensure compliance with all Federal Acquisition Regulation provisions and the terms of the contract.
3. Require the contractor to provide power, water, and waste disposal calculations to operate the facility
4. Obtain equitable price adjustment for all de-scoped or modified work.

Basrah Provincial Reconstruction Team (PRT) continue efforts to coordinate with the Government of Iraq to provide the necessary utilities to adequately operate the facility.

Management Comments

GRD responded that the documents its offices provided to SIGIR were outdated and not official documents. However, GRD concurred with Recommendations 1 and 2; has additional documents that resolved Recommendation 3; and did not concur with Recommendation 4. The U.S. Embassy provided assurance that the recommendation to the PRT would be implemented.

Evaluation of Comments

SIGIR requests the documentation to resolve Recommendation 3 be provided and that GRD further explain its non-concurrence with Recommendation 4.

For more information, contact SIGIR Public Affairs at (703) 428-1100 or PublicAffairs@sigir.mil

Basrah Modern Slaughterhouse

What SIGIR Found

The objective of this \$5.6 million Economic Support Fund project was to design and construct a modern slaughterhouse in the Az Zubayr district of the Basrah province. SIGIR performed a limited on-site assessment of 1 hour on 29 September 2009 and found the facility to be approximately 45% complete.

The contract and its Statement of Work (SOW) were poorly written and confusing, causing four of Gulf Region South's (GRS) representatives, including the project's construction representative, to not understand the requirements. The contractor designed a slaughterhouse facility significantly smaller than the contract and SOW required; consequently, it appears that the contractor was overpaid.

SIGIR expressed concerns about the adequacy of the building's structural support. However, GRS stated that the contractor's overall structural design was reviewed and approved by a licensed structural engineer; therefore, SIGIR considers this matter adequately addressed.

SIGIR reviewed quality control (QC) and quality assurance (QA) reports and found that the QA representatives, overall, did an effective job identifying and correcting construction deficiencies at the project site.

While the contract addressed sustainability for construction and spare parts, the remainder of the project suffers from a lack of adequate planning. This facility will require a significant supply of electricity and potable water to operate, as well as, for the safe disposal of wastewater and blood products. Reliable permanent power is essential for operating the slaughtering equipment, cold storage rooms, waste processing equipment, laboratory, and miscellaneous ancillary facilities. Potable water is needed for human consumption and facility cleaning. Wastewater and blood disposal is critical for protecting the environment and citizens of Basrah. After 19 months since the contract was awarded, a source of permanent power, potable water, or sewage and blood disposal for the slaughterhouse has not been identified. SIGIR found the project results to date are not consistent with the original contract objectives.





SPECIAL INSPECTOR GENERAL FOR IRAQ RECONSTRUCTION

April 27, 2010

MEMORANDUM FOR COMMANDING GENERAL, UNITED STATES CENTRAL
COMMAND
COMMANDING GENERAL, UNITED STATES FORCES-IRAQ
COMMANDING GENERAL, JOINT CONTRACTING COMMAND-
IRAQ/AFGHANISTAN
DIRECTOR, IRAQ TRANSITION ASSISTANCE OFFICE

SUBJECT: Report on the Basrah Modern Slaughterhouse, Basrah, Iraq
(SIGIR Project Number PA-08-189)

We are providing this project assessment report for your information and use. SIGIR assessed the design and construction work being performed at the Basrah Modern Slaughterhouse, Basrah, Iraq to determine its status and whether objectives intended will be achieved. This assessment was made to provide you and other interested parties with real-time information on a relief and reconstruction project underway and in order to enable appropriate action to be taken, if warranted.

SIGIR received comments on a draft of this report from the U.S. Embassy's Office of Provincial Affairs as well as comments from the Gulf Region District of the U.S. Army Corps of Engineers that were approved by the U.S. Forces-Iraq. The comments were sufficient to resolve a recommendation made to the Basrah Provincial Reconstruction Team and two of the four recommendations made to the Gulf Region District. SIGIR requests that the Gulf Region District provide additional documentation to resolve Recommendation 3 and that the Gulf Region District further explain its non-concurrence with Recommendation 4.

We appreciate the courtesies extended to our staff by representatives of the Iraq Transition Assistance Office, the Basrah Provincial Reconstruction Team, and the Gulf Region District, the Southern Area Office, and the Basrah Resident Office of the U.S. Army Corps of Engineers. If you have any questions please contact Mr. Brian Flynn at brian.flynn@sigir.mil or at 240-553-0581, extension 2485. For public queries concerning this report, please contact SIGIR Public Affairs at publicaffairs@sigir.mil or at 703-428-1100.

Stuart W. Bowen, Jr.
Inspector General

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Introduction

Background

In many developing countries, the lack of appropriate slaughtering facilities and substandard slaughtering techniques result in the unnecessary loss of meat and meat by-products. Slaughtering facilities are frequently contaminated and may not be protected from dogs, rodents, and insects. Meat products coming from such conditions are often deteriorated due to bacterial infection or contamination, which may cause food poisoning or diseases in consumers. Inadequate or non-existent regulations concerning the slaughtering of animals can expose consumers to pathogens¹, including zoonotic² parasites.

The discharge of the waste, polluted effluents, and animal excreta of slaughterhouses directly into waterways, carrying with it animal hormones, antibiotics, uric acid, E. coli, and colon bacteria, can also present significant health and environmental hazards to local communities. In countries without safety and sanitary enforcement, people living near slaughterhouses have suffered from insanitary conditions, with many of them owing their ailments to unhygienic conditions.

Slaughterhouses in Muslim Countries

Islam has laws regarding which foods can and cannot be eaten and also the proper method of slaughtering an animal for consumption, referred to as dhabihah. Dhabihah is the prescribed method of ritual slaughter of all animals, excluding camels, fish and most sea-life per Islamic law. This method of slaughtering an animal consists of a swift, deep incision with a sharp knife on the neck, cutting the jugular veins and carotid arteries of both sides while leaving the spinal cord intact.

Halal is the Arabic word for “permissible,” which in connection with food, means food that Muslims are permitted to consume under Islamic Shariah Law. Islamic Shariah Law considers all food Halal unless it is specifically prohibited in the Quran. Specifically, Quranic verses prohibit the consumption of foods such as:

- flesh of a pig
- animals improperly slaughtered or dead before slaughtering
- animals slaughtered in the name of anyone but Allah
- blood
- carrion (animals that were dead before slaughtering)
- carnivorous animals, and animals with fangs
- land animals without external ears
- foods not free from contamination while being prepared or processed
- foods processed, made, produced, manufactured and/or stored using utensils, equipment and/or machinery that have not been cleansed according to Islamic Sharia Law

Stunning

Stunning is a western practice of rendering animals unconscious through the use of electric shock before slaughtering. However, strict religious laws in many Muslim

¹ Pathogens are agents that cause disease, especially a living microorganism such as a bacterium or fungus.

² Zoonotic parasites carry any disease that is spread from animals to people.

communities require that the animals being slaughtered should be conscious at the point of death. Since stunning can lead to the death of an animal prior to slaughter, Islam's concern is that someone may not know that an animal was killed by stunning and slaughter the animal anyway. The Quran specifically forbids the consumption of a dead animal prior to slaughtering. In addition, stunning, according to Islamic Sharia Law, whether electrical or mechanical, causes pain, suffering, paralysis, and potentially death to an animal, which is also forbidden.

In 1963, the Food and Agriculture Organization of the United Nations and the World Health Organization established the Codex Alimentarius Commission³. The Codex Alimentarius⁴ is a collection of internationally recognized standards, codes of practice, guidelines and other recommendations relating to foods, food production, and food safety. In 1997, the Codex Alimentarius Commission wrote the "General Guidelines for Use of the Term 'Halal'." This guideline stated the following:

"The Codex Alimentarius Commission accepts that there may be minor differences in opinion in interpretation of lawful and unlawful animals and in the slaughter act, according to the different Islamic Schools of Thought. As such, these general guidelines are subjected to the interpretation of the appropriate authorities of the importing countries. However, the certificates granted by the religious authorities of the exporting country should be accepted in principle by the importing country, except when the latter provides justification for other specific requirements."

With respect to slaughtering, the guideline required the following:

"the animal to be slaughtered should be alive or deemed alive at the time of slaughtering."

Since the use of "stunning" is not explicitly forbidden, the Commission allows flexibility to each Islamic School of Thought. Those who follow a strict interpretation of the Quran will not utilize stunning; while allowing others to use the practice of stunning.

Objective of the Project Assessment

The objective of this project assessment was to provide real-time information on relief and reconstruction projects to interested parties to enable appropriate action, when warranted. Specifically, the Special Inspector General for Iraq Reconstruction (SIGIR) determined whether:

1. Project components were adequately designed prior to construction or installation;
2. Construction or rehabilitation is in compliance with the standards of the design;
3. Adequate quality management programs are being utilized;
4. Sustainability was addressed in the contract or task order for the project; and
5. Project results were or will be consistent with their original objectives.

³ The Commission's goals are to protect the health of consumers and ensure fair practices in the international food trade.

⁴ Alimentarius is Latin for the "food code."

Pre-Site Assessment Background

Contract, Costs and Payments

Firm-fixed-price contract number W917BK-08-C-0063, funded by the Economic Support Fund in the amount of \$5,635,000, was awarded to a local contractor on 31 August 2008 by the U.S. Army Corps of Engineers (USACE), Gulf Region South (GRS)⁵. The period of performance for this project was 270 days after the Notice to Proceed. The USACE GRS issued the Notice to Proceed on 11 October 2008; consequently, the project was to be completed by 8 July 2009.

This contract had one modification:

- Modification 1, dated 28 November 2008, extended the period of performance 45 days (from 8 July 2009 to 22 August 2009) at no additional cost to the U.S. government. The period of performance extension was due to the change in project site location.

Project Objective

The overall objective of this project was to design and construct a slaughterhouse in the Az Zubayr district of the Basrah province. A slaughterhouse is a facility in which animals are killed and processed for meat or meat-food products. These animals are the most commonly slaughtered for human consumption:

- cattle (for beef and veal)
- sheep (for lamb)
- pigs (for pork)
- goats (for chevon)
- fowl (chickens, turkeys, and ducks for poultry meat)

Slaughtering animals poses significant public health concerns, such as E. coli and Salmonella.

Prior to this project, the Basrah province did not have an adequate number of slaughterhouses to kill and process meat in a safe and sanitary environment which endangered the health and welfare of the citizens of Basrah. This project will benefit the local city residents by providing them with access to fresh and processed meat produced hygienically.

⁵ Formerly, the U.S. Army Corp of Engineers (USACE) organization in Iraq consisted of the Gulf Region Division under which were the Gulf Region North District (GRN), Gulf Region Central District (GRC), and Gulf Region South District (GRS). Each of the Districts had local area, resident, and project offices. The designation of a local office as an area, resident or project office depended on the number of reconstruction projects that it was responsible for overseeing.

Since July 2009, the USACE in Iraq has been undergoing reorganization to downsize as the number of reconstruction projects has diminished. The Gulf Region Division was disestablished. GRN, GRC, and GRS have been combined to form the Gulf Region District. The reduced number of reconstruction projects has also resulted in the closing or reduction in size of many of the local area, resident and project offices. The local offices that have been reduced in size have had their designations changed from area offices to resident or project offices.

In the body of this report, the names of USACE organizations at the time of the actions cited are used. Recommendations are directed to the current designations of the organizations able to take corrective action.

Pre-Construction Description

SIGIR based the description of the facility (pre-construction) on information obtained from the contract, the USACE project file, and discussions with USACE personnel.

The original proposed site of the Basrah Slaughterhouse was located approximately 13 kilometers (km) south of the outskirts of the city of Basrah and 10 km east of Az Zubayr (Figure 1).

The population of Az Zubayr is approximately 123,000, with Sunnis consisting of about one-third of the district's residents. The Az Zubayr district is located just southeast of Lake al-Hammar at the end of a railway line to Baghdad. The area has long been important in trade with Saudi Arabia and Kuwait. Prior to the founding of the Iraqi capital of Baghdad, Basrah, Kufa, and Wasit were the largest and most significant cities in Iraq. Az Zubayr stands on the original 7th century site of Basrah, located 8 miles to the northeast. From Az Zubayr, one can still see the remains of the mosque dedicated to the memory of Zubayr, one of the Prophet Muhammad's companions, who was killed in the Battle of the Camel in 656 AD. Over the centuries the city of Basrah moved progressively eastward in its search for water; each time abandoning the western quarters until the city reached its present site.

Prior to the start of construction, GRS performed a site survey of the proposed location and identified two potential concerns. First, the site was situated in an uninhabited area of a flood plain. Upon further examination, GRS found clay at a depth of just less than two feet (Site Photos 1 and 2). GRS was concerned that clay encountered at this depth may pose difficulties for construction activities.

In addition, the site was located on the eastern bank of the Shatt Al Basrah Canal, which limited the routes to the project site because there are few asphalt roads in the area and the network of stabilized earth tracks that run along raised berms in the area are difficult to navigate during winter.

Ultimately, GRS decided to move the project site location from the flood plain area, which resulted in a 45-day delay in construction activities.



**Site Photos 1 and 2. Site survey found clay at a depth of less than two feet
(Courtesy of GRS)**

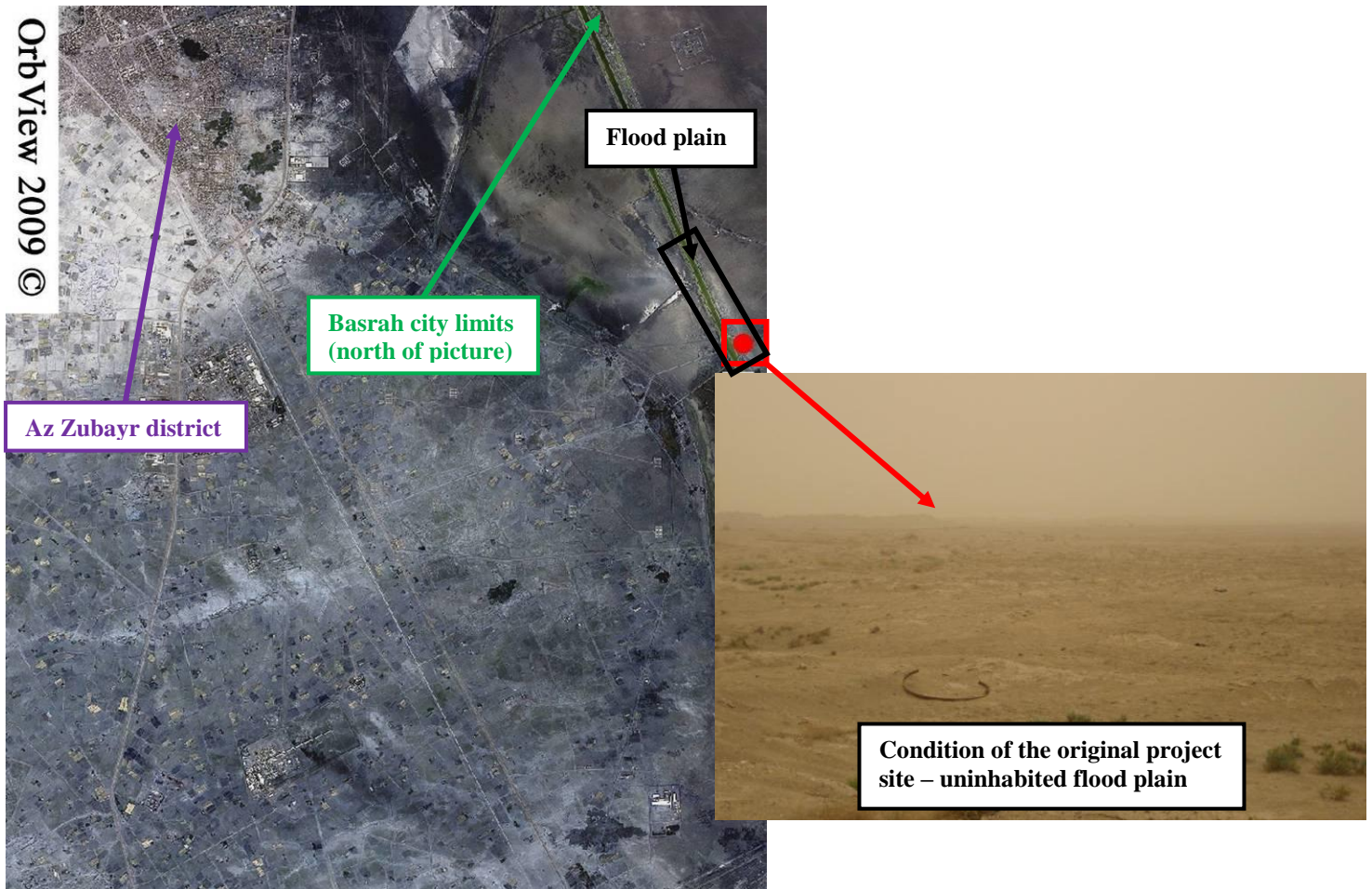


Figure 1. Original location of the Basrah Slaughterhouse
(Courtesy of GRS)

Statement of Work

The Statement of Work (SOW) required the contractor to design and construct a 6,000 square meter (m^2), fully functioning, sheep and cattle slaughtering facility to support the Zubayr district of the Basrah province. The SOW required the construction of the following:

- main slaughtering halls for sheep and cattle
- meat testing rooms and laboratory
- refrigeration room
- leather shop
- incinerators
- blood septic/holding tank systems
- guard houses
- electrical, mechanical, water, and sewerage utilities
- walkways and sidewalks
- garden area
- landscaping
- perimeter fence
- supply and installation of sheep and cattle slaughtering equipment for production lines

Project Design and Specifications

The SOW included requirements for the contractor to submit preliminary, 95%, and final (100%) design drawings to the contracting officer representative for approval, as required by the technical specifications. In addition, the contractor must submit six hard copies and six copies on CD/DVD of all as-built technical information and drawings within 30 days of project turnover.

The contract included a section on “Codes and Standards,” which stated the following:

In the absence of any project specific codes and standards referenced in the Scope of Work, standard Iraqi specifications appropriate to each work activity will apply. If there are no applicable standard Iraqi specifications, the 2006 International Building Codes (ICC) [sic] will apply.

The contract also included a section entitled, “Special Instructions,” which stated the following:

The Contractor is responsible to provide a complete and useable product upon the conclusion of construction in compliance with the scope of work and all applicable codes and specifications....

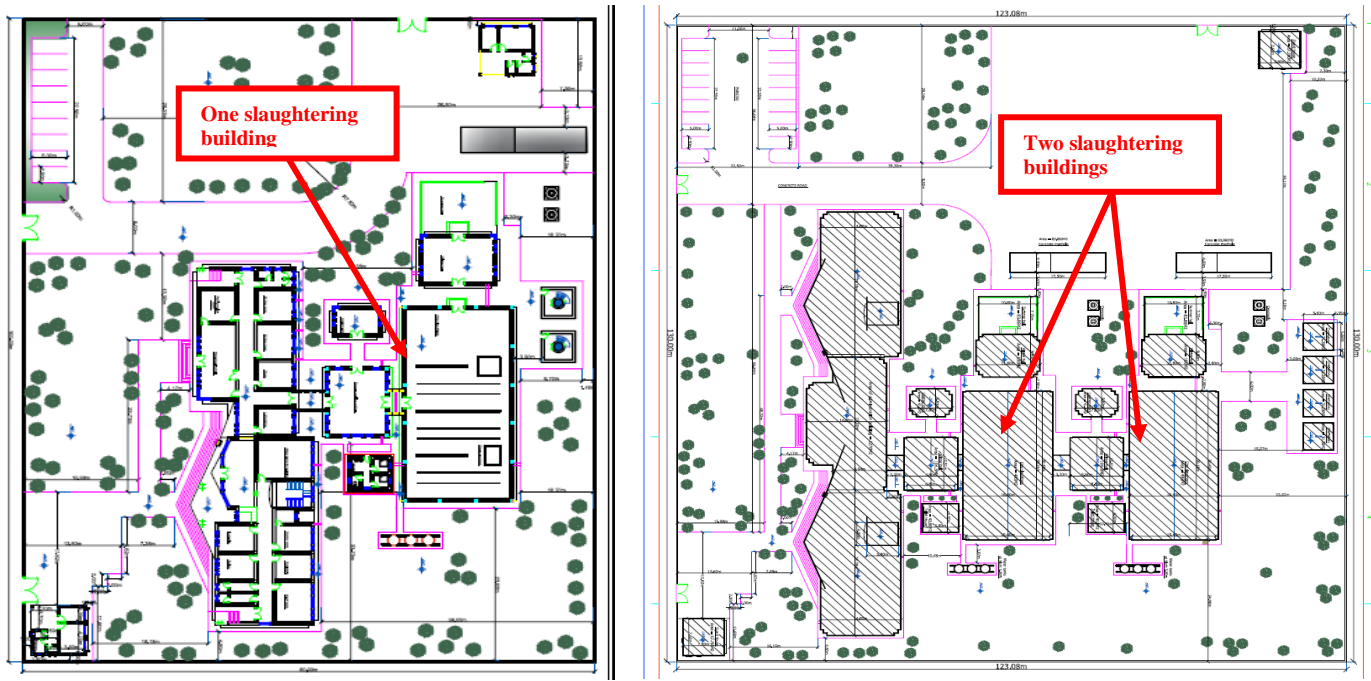
Size of the Facility

The “Special Instructions” and SOW specifically required the contractor to design and construct an approximately 6,000m² sheep and cattle slaughtering facility. The contract’s scope of work included the following:

[C]onceptual drawings from a similar facility built elsewhere...The provided conceptual drawings do not indicate the proper dimensioning pertaining to our facility (this project). The required facility for this project shall be approximately twice the slaughtering operational area of the buildings indicated on the attached conceptual drawings, with the exception of the supporting structures of the administration building, guard houses, general halls, etc., which will not require the additional area expansion.

SIGIR reviewed the SOW and the GRS-provided conceptual designs. SIGIR found that the SOW lacked a process flow diagram to identify the required building sizes; while GRS provided two completely different types of slaughterhouse facilities as conceptual designs (Figures 2 and 3). One conceptual drawing indicates one slaughtering building; while the other conceptual drawing showed two slaughtering buildings. In addition, the conceptual designs left large gaps for personal interpretation.

The contractor-submitted proposal indicated a land parcel size of 6,000m² (100m by 60m), but with a total area of all buildings approximately 2,200m² (Figure 4).



Figures 2 and 3. Conceptual designs for the slaughterhouse project
(Courtesy of GRS)

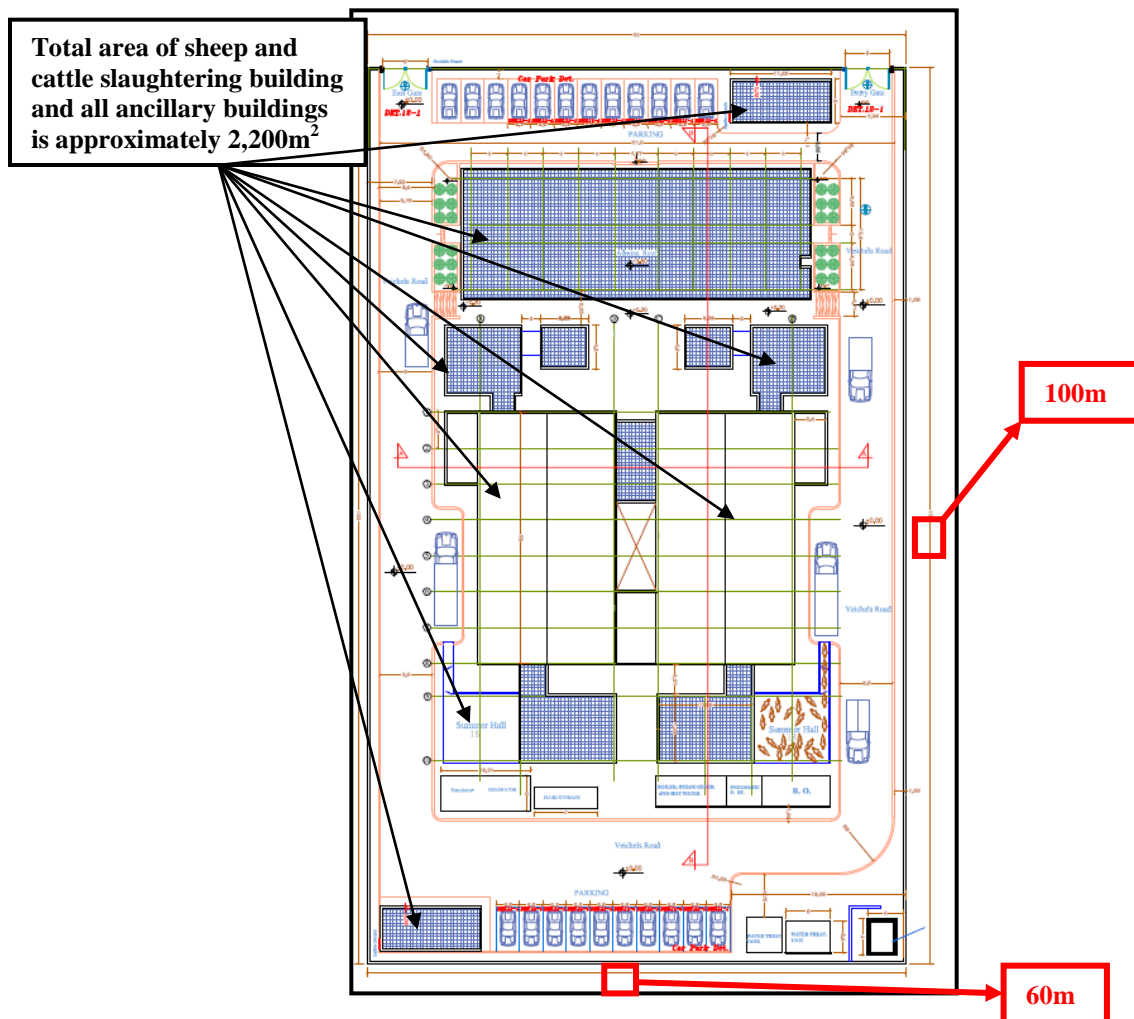


Figure 4. Contractor site plan with length and width dimensions (Courtesy of GRS)

As mentioned earlier, the “Special Instructions” section of the contract stated:

...the required facility for this project shall be approximately twice the slaughtering operational area of the buildings indicated on the attached conceptual drawings....

This required the contractor to design two slaughtering buildings (one for sheep and another for cattle) at approximately 30m x 60m. However, on 21 December 2008, the contractor submitted to GRS a design for two slaughtering buildings of approximately 15m x 30m each.

Internal e-mail discussions between GRS representatives capture the confusion over the size and complexity of this project. Specifically, one GRS representative stated that “*there is confusion regarding what is actually required for the project*” while three other GRS representatives found the contractor’s submittals to be significantly less than the contract requirements. For example, in January 2009, a GRS representative identified that the “*contractor’s plans indicate a facility that is less than 25% the size of what the contract calls for...I am not going to allow the contractor to proceed unless he adjusts his plans accordingly. If the contractor refuses, this contract will be in a T for D [termination for default] circumstance.*”

Another GRS representative stated that the “*Contractor left the meeting knowing that he has to expand his plans and double the size of some buildings...the 35% plans were not approved. We asked the Contractor to resubmit with all the facilities size is enlarged. We even showed him in the scope of work where that paragraph indicated the future expansion and arrangement to accommodate this expansion.*”

As the designs were further disseminated through GRS, the project’s construction representative also identified two discrepancies. Specifically, “*the SOW calls for the ‘operational area’ to be twice the dimensions of the conceptual drawings. The dimensions of the conceptual drawings provide for an operational area of 1,728 sq. meters. Your [the contractor’s] design shows an operational area of 840 sq. meters. This amount is about half of the area required by the contract.*”

In addition, the construction representative stated, “*In section 4.2.11 of the SOW, it states that the KTR [contractor] shall ‘provide labor, equipment and material to build the 500m walls of the fence with 24cm...etc.’ The KTR’s current design requires only 320m of perimeter fence.*”

Even though three GRS representatives identified the above mentioned significant deficiencies in the contractor’s design, on 24 January 2009, GRS approved the contractor’s 65% design. Another GRS representative⁶ responded to the concerns voiced by the three GRS representatives. An e-mail stream between these individuals documents the rationale for approving the contractor’s submittal. According to this individual, when pressed about the size of the facility and fence, he stated:

When the project was estimated the actual land lot size was not known and the fence size was estimated on the basis of a conceptual development based on a smaller similar facility built in Mosul...The 320m fence is acceptable, due to the smaller lot size. We are still getting the anticipated production. The only thing

⁶ A contractor in the GRS Engineering and Construction department.

eliminated due to smaller lot size is the landscaping. The current layout was accepted last year with minor changes during the 35% submittal.

The GRS construction representative concluded the e-mail by forwarding the e-mail chain to a GRS local national with the following:

I checked up on what we thought was an error in the contractor's design, and after many phone calls and e-mails, we (GRS representative⁷ and I) were told that the design is ok the way it is. I'm not sure that I agree, but at this point it doesn't matter. I have attached a portion of the chain of e-mails for your reading pleasure. As it stands now, the contractor can proceed as planned.

SIGIR reviewed the project file GRS provided for legal analysis or written justification for the decision to approve the contractor's submittals. Other than the e-mail from the lone GRS representative, who stated that the contractor's design was acceptable, the project file lacked any analysis or written justification.

GRS Response to the Size of the Facility

After reviewing the contract, contract appendices, SOW, GRS e-mails, and contractor design submittals, SIGIR became concerned that the contractor had proposed a significantly reduced sized slaughterhouse facility. SIGIR brought this issue to the attention of GRS, who researched it and responded:

The Director General (DG) gave GRS 6000 square meters of land for the entire Basrah Slaughterhouse Facility. Attached is a sketch of the 6000 sq meter FACILITY. The Slaughterhouse structure itself is considerably less than 6000 sq Meters but it is the Centerpiece of the 6000 Sq Meter FACILITY. The GRS Scope of work was for the entire 6000 sq meter facility, while there have some minor modifications to the contract, there are no reductions to the size of the slaughterhouse building.

GRS's contention is that the entire parcel of land is the "facility," while the actual slaughterhouse structure and ancillary buildings are the "centerpiece." However, this contention contradicts the original contract and SOW requirements. The project file included an appendix titled Bill of Quantities (BOQ), which identified each feature of work the contractor was to perform for mobilization and construction of the project. The BOQ required the contractor to prepare a site⁸ of 15,877m² and construct an overall building area⁹ of 3,248m². However, when the project location changed in November 2008, the project site was reduced to 6,000m² and an actual building area of 2,141m².

The project file lacked documentation to indicate whether GRS attempted to make an equitable price adjustment for the significantly de-scoped amount of work the contractor was to perform. GRS did not address obvious areas for equitable price adjustment with the contractor. For example, the approving GRS representative stated the "only thing eliminated due to smaller lot size is the landscaping." The contract paid the contractor for 15,877m² of site preparation; however, the smaller

⁷ SIGIR removed the name of the GRS representative identified in the e-mail to protect his privacy.

⁸ Preparing a site includes dewatering, grubbing, and removing the top 10cm of soil and the debris to an authorized disposal.

⁹ Overall building area includes the administrative building, slaughter buildings, leather store, bathroom, winter and summer halls, bowl cleaning, incinerator, and guardhouses.

lot size reduced the contractor's work to 6,000m² of site preparation. Yet, GRS did not attempt to make an equitable price adjustment for this obvious and recognized case of significantly de-scoped work. Further, the reduced lot size decreased the amount of perimeter wall necessary—from the contract required 506 linear meters to 320 linear meters. As in the previous case, GRS did not attempt to seek equitable price adjustment from the contractor. In both cases, GRS did not provide a written justification for not seeking equitable price adjustment.

The contract contained specific references to any contractor-proposed variations from the contract requirements. For example, the SOW specifically stated:

No changes to the work described in this scope of work shall be made unless approved in writing by the contracting officer.

In addition, the SOW references Federal Acquisition Regulation (FAR) 52.236-21 "Specifications and Drawings for Construction," which states:

(f) If shop drawings show variations from contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

Further, the "General Specifications" section of the contract states:

The contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. Variations from the contract requirements require prior written Government approval and will be considered where advantageous to government. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations... When proposing variation, deliver written request to the contracting officer, with documentation of the nature and features of the variation and why the variation is desirable and beneficial to government....

Considering the contractor submitted a design significantly less than what the contract required, SIGIR questions how this is "desirable and beneficial" to the U.S. government. In addition, as mentioned above, the FAR and SOW required written justification and a contract modification for the proposed contract variations. The project file lacked contract modifications or written justifications addressing the significant change in scope. SIGIR is concerned by the lack of justification for the significant reduction in the scope of work required of the contractor. Further, since GRS did not seek equitable price adjustment from the contractor, the U.S. government apparently overpaid the contractor for this project.

Conclusion

The contract and SOW required a 6,000m² slaughterhouse facility. However, within GRS, there was "confusion" as to what the definition of "facility" is. For example, four GRS representatives, including the construction representative responsible for the project, reviewed the contract and SOW and determined that the project required the contractor to construct a slaughterhouse with an operational area of 1,728m² and perimeter fence of 500m. Yet, when the contractor submitted designs providing an operational area of 840m² and a perimeter fence of 320 meter (m), GRS approved the designs. In addition, GRS did not attempt to negotiate an equitable price adjustment for the significant amount of work de-scoped from the project. For

example, a GRS representative who approved the contractor's submittal stated that the: *"only thing eliminated due to smaller lot size is the landscaping."*

Yet, there was no attempt to negotiate an equitable price adjustment with the contractor for an obvious decrease in the amount of work required.

GRS responded that the intent of this project was to provide a slaughterhouse on a 6,000m² parcel of donated land from the Government of Iraq (GoI). However, this contention contradicts the contract, SOW, and BOQ, which required a substantially larger facility for the GoI.

Based upon the review of the contract, contract modification, SOW, GRS e-mails, and contractor submittals, SIGIR determined that the contract and SOW were so poorly written and so confusing that four of GRS's representatives, including the project's construction representative, misunderstood the requirements. In addition, it appears the contractor has been overpaid for the work performed.

Cattle and Sheep Equipment

As mentioned earlier in this report, the issue of animal stunning prior to slaughtering is very important in Muslim countries. This slaughterhouse is designed to utilize stunning for cattle. The SOW included "One Cattle stunning/killing box" and the contractor's submittal included the utilization of stunning equipment. Orthodox Muslim countries forbid the practice of stunning an animal prior to slaughtering. The project file lacked documentation indicating whether the GoI was fully aware of the requirement for stunning equipment for this slaughterhouse.

Contractor 100% Design Submittal

A contractor's 100% design submittal is the actual construction document package, which includes revisions and corrections made to the previous submittals (i.e. 35%, 65%, etc). The 100% design submittal represents what and how the contractor actually plans to construct.

After reviewing the contractor's 100% design drawings and related construction documentation, SIGIR found them to be inadequate for initiating construction. Specifically, the 100% drawings were incomplete and riddled with inaccuracies, omissions, and unapproved changes.

Sewer Collection System

The contractor design plans for the sewer collection system consisted of a wastewater plan and various details. The entire facility appears to be split into three separate systems. Septic waste is directed to a septic tank at the northeast corner of the site; storm water runoff is carried to a storage tank at the southeast corner of the site; while a third system collects blood in storage tanks and conveys the blood to the waste processing equipment.

Typically, a slaughtering and meat processing facility uses a significant amount of wash down water to maintain the facility's cleanliness. From the contractor's S-2 drawing, it appears that the trench drains intercept the runoff from the production floor of the facility. The drawings further indicate that this drain is directed to blood storage tanks on either side of the facility. The contractor did not provide sizing calculations for the blood storage tanks, conveyance lines, or processing equipment;

therefore, SIGIR could not determine if the tanks, lines, or equipment were appropriately sized for the current and future capacity of the facility. In addition, there is no indication that the provided storage for blood is compatible with the capacity of the processing equipment. Further, since the SOW required planning for future expansion, the capacity of the tanks potentially could be an issue when additional capacity from the production lines is added.

The contractor's drawing S-5 shows the blood storage tank contents conveyed via a 200 millimeter pipe to the "Water Treatment Unit." However, screening of the effluent from the storage tanks is not indicated on the plans. This will present a maintenance issue with the lines to the treatment unit if clotting of the blood is permitted in the tanks.

In addition, SIGIR is concerned that the blood and waste products from the production floor wash down is being directed to the Water Treatment Unit (Figure 5). Based upon the BOQ, this unit is for disinfection and treatment and is probably not appropriate for treating blood. A "Blood Separation and Coagulation System" is specified in the BOQ; however, the contractor did not address the capability and location of this equipment.

The storm water system includes a series of manholes and inlets directing runoff to an underground storage tank. However, there are no details of the tank, including any indication as to how the storm water storage tank will be emptied.

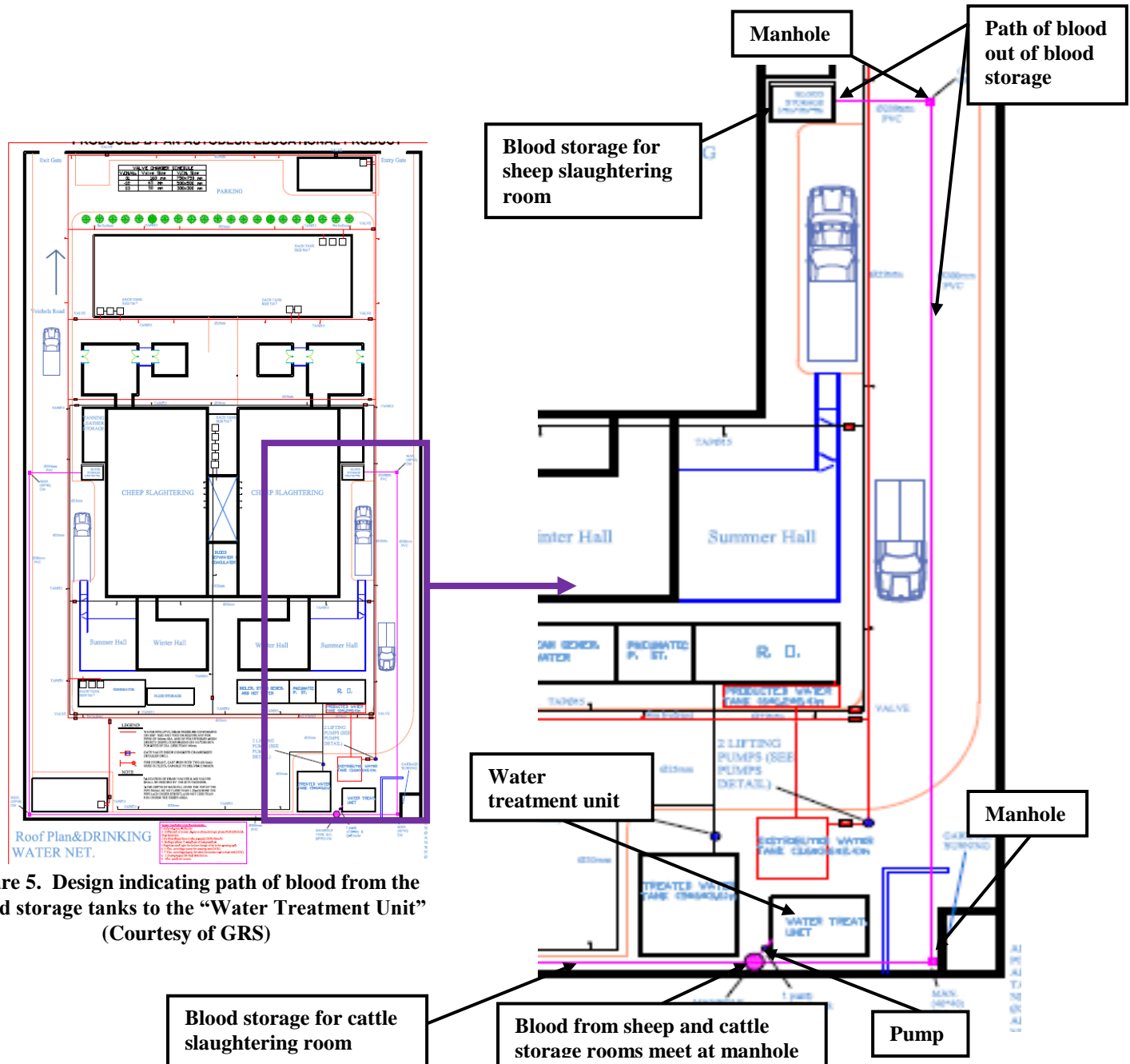


Figure 5. Design indicating path of blood from the blood storage tanks to the “Water Treatment Unit” (Courtesy of GRS)

Incinerator

The SOW required the contractor to “construct four incinerators.” However, depending upon which drawing is reviewed, the area in the southwest section of the project site is identified as “Garbage Burning,” “Incinerator,” or simply blank. The contractor’s 100% site plan drawing does not label this area; while several drawings refer to it as “Garbage Burning.” On the “Ground Floor Plan,” this area is labeled as “Incinerator.”

In addition, the contractor’s incinerator detail drawing also lists it as “garbage burning detail.” Consequently, SIGIR could not determine if the intent is for burning

garbage or for destroying meat and offal¹⁰. Further, there is no explanation for the contractor submitting only the design of one incinerator instead of the four required by the SOW. The project file does not contain any justification for this modification.

Guard Houses

The SOW required the construction of two guardhouses with electrical fixtures and plumbing. However, on the contractor's 100% "Site Power Distribution Plan," there is only one guard house (Figure 6). The second guard house in the southeast corner is included in a majority of the contractor's other 100% drawings (Figure 7); yet for some reason the entire guardhouse is missing from the Site Power Distribution Plan. As a result of this omission, the 100% plan obviously does not illustrate the required electrical connections or fixtures to this guard house.

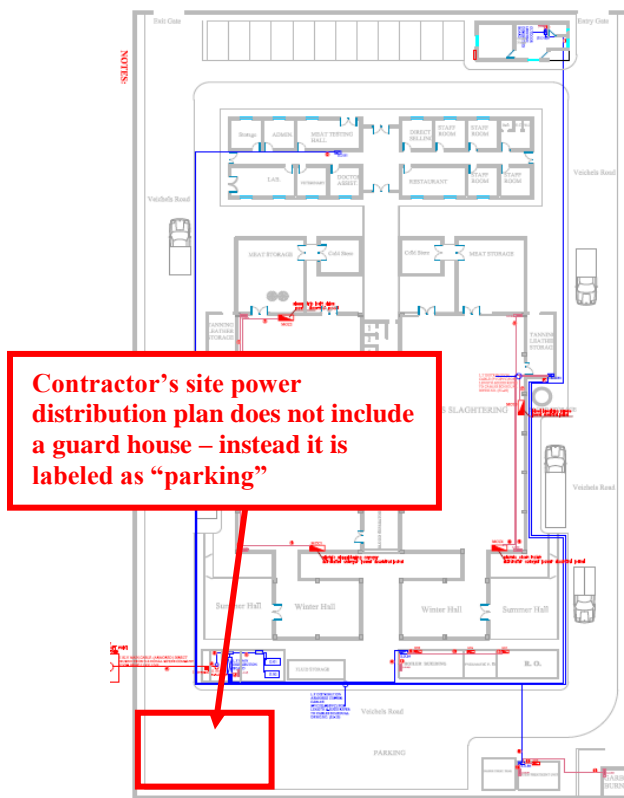


Figure 6. Site power distribution plan without guardhouse (Courtesy of GRS)

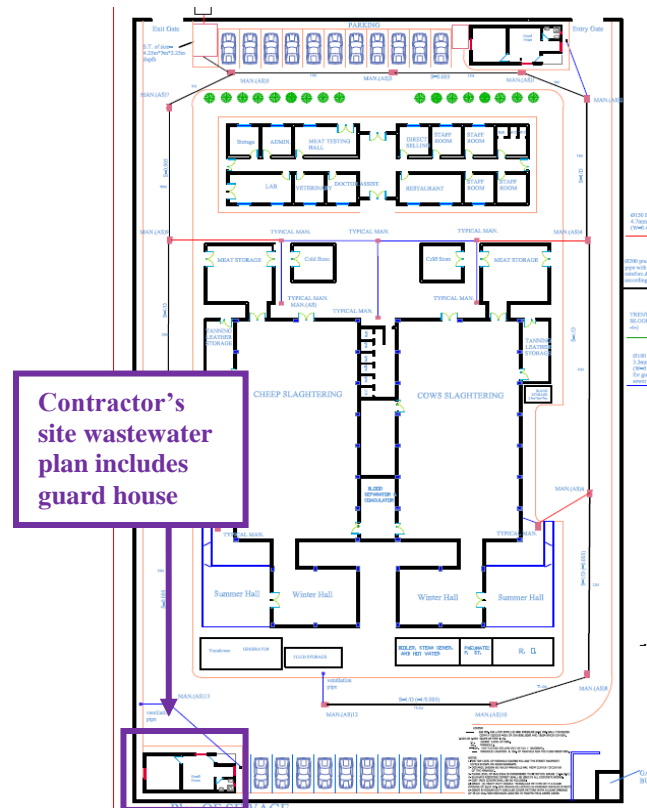


Figure 7. Site wastewater plan includes guardhouse (Courtesy of GRS)

Future Expansion of the Slaughterhouse

The contract required the contractor's design plans and drawings to take into account the sizing of all required equipment and buildings in support of the slaughterhouse operation and for future expansion, including generators, septic system, incinerators, boiler, compressor, blood separator, refrigeration, holding tanks, main sheep and cattle slaughtering facilities, and administration building.

¹⁰ Offal is a culinary term used to refer to the entrails and internal organs of a butchered animal.

The contractor's submittal did not provide any information regarding future expansion.

Overall Planning

SIGIR found that the project was not well planned. For example, the project file did not include any assumptions, such as the anticipated number of sheep and cattle to be housed in the summer/winter halls prior to slaughtering, the daily number of sheep and cattle to be slaughtered, or the daily requirements of electrical power, potable water, and wastewater. Without these basic assumptions, it cannot be determined whether the contractor adequately designed the facility for the anticipated operational requirements.

In addition, after reviewing the drawings, SIGIR is concerned with the proximity of the water treatment unit, water storage tanks, and the reverse osmosis unit to the untreated blood and incinerator. This layout will increase the probability of contamination of the treated water supply.

Site Assessment

On 29 September 2009, SIGIR conducted an on-site assessment of the Basrah Modern Slaughterhouse project, accompanied by three GRS representatives and the contractor. Due to heightened security concerns, the total time available on site was approximately one hour. Consequently, SIGIR performed an expedited assessment of the areas available; therefore, a complete review of all work completed was not possible.

Project Significantly Behind Schedule

The project was significantly behind schedule. According to the contract and subsequent contract modification, the contractor had 315 days from the Notice to Proceed, which was acknowledged on 11 October 2008. SIGIR's site visit was approximately 5 weeks after the 22 August 2009 deadline to complete the project. SIGIR found the facility to be approximately 45% complete. None of the building systems, such as potable water storage and distribution, wastewater conveyance/disposal, or electrical power production and distribution, were in place. As a result, SIGIR could not provide a functional assessment of the project.

Perimeter Fence

The SOW required the construction of a perimeter fence. As mentioned in the Design section of this report, the SOW required a 500m perimeter fence; however, the reduction in land size reduced the perimeter fence to only 320m.

The contractor's design required the perimeter fence consist of reinforced concrete foundation, columns, and metal trusses between the columns. Concrete masonry unit panels, covered with cement mortar and stucco, were constructed between the columns to form a solid barrier (Figure 8).

At the time of the site visit, the perimeter fence was partially complete (Site Photo 3). The fence appeared to be adequately constructed, and when finished, should provide security for the slaughterhouse operators and equipment, as well as, from stray dogs and rodents attracted by the slaughterhouse.

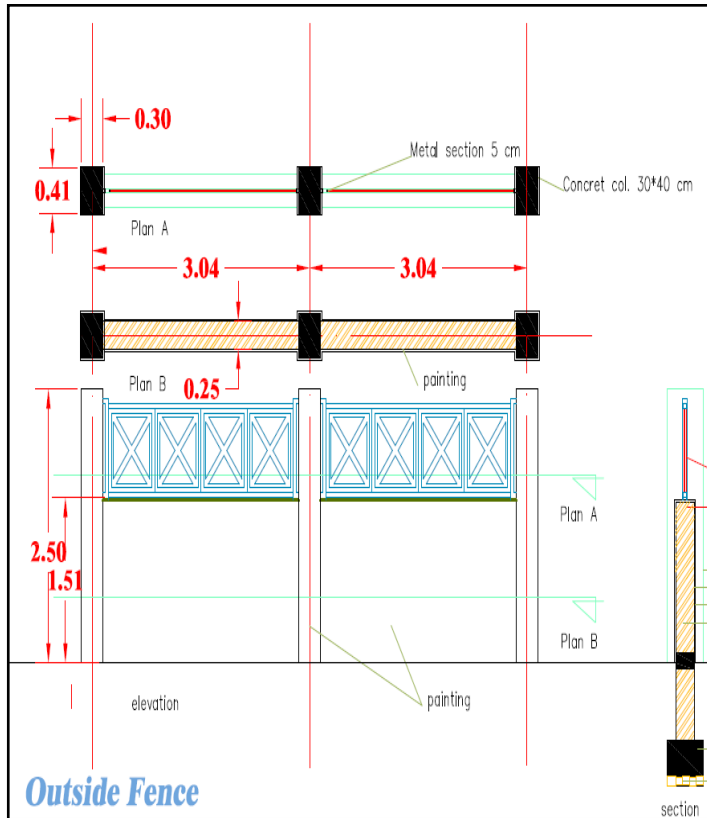


Figure 8. Design of perimeter fence
(Courtesy of GRS)



Site Photo 3. Partially constructed perimeter fence

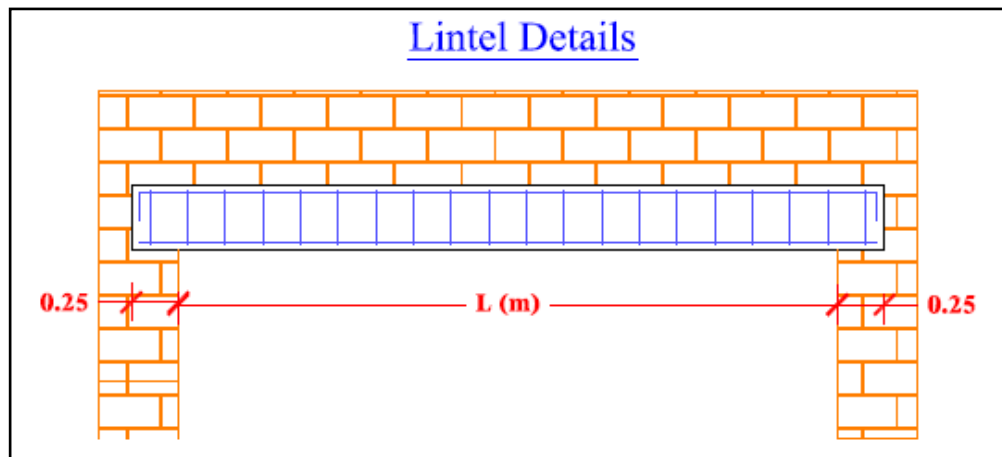
Slaughtering Buildings and Ancillary Support Buildings

During the site visit, SIGIR found the slaughtering buildings and ancillary support buildings to be approximately at the same degree of completion. Excavation work was completed, reinforced concrete foundations and columns were poured, clay brick walls were laid, and window and door frames were being installed.

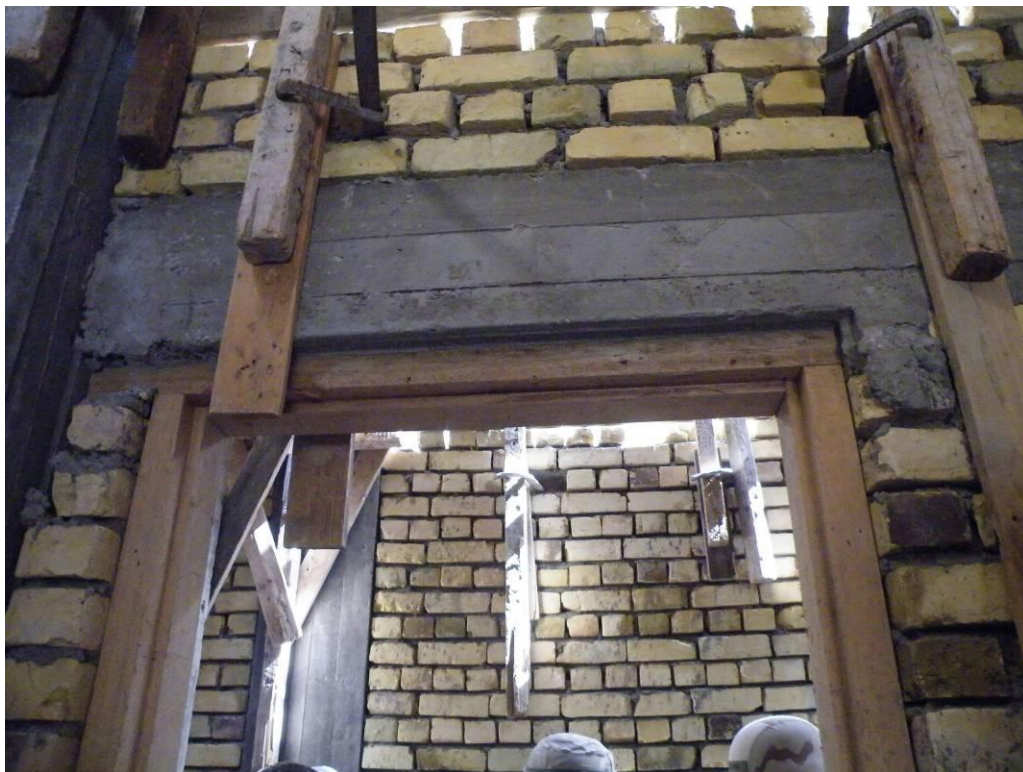
Lintels

SIGIR identified potential issues with the contractor's placement of lintels and tie beams¹¹. The contractor's structural drawing S1 required lintels for all doors or windows to have at least 25 centimeters (cm) of bearing on the brick masonry supports (Figure 9). During the site visit, SIGIR identified several locations where lintels for door openings were not placed according to the contractor's structural drawings (Site Photo 4).

¹¹ Lintels are horizontal load bearing members. These members are commonly used to support the weight of the structure located above the openings in a bearing wall created by windows and doors. A tie beam is a horizontal beam spanning between independent spread footings or pile caps. Tie beams are commonly used to support light loads such as exterior masonry walls and transfer these loads to the footings. Tie beams are also used to prevent independent footings from moving laterally during seismic events.



**Figure 9. Contractor's detail for placement of lintels for doors and windows
(Courtesy of GRS)**



Site Photo 4. Door lintel not placed according to contractor's design

SIGIR's concern is that these lintels do not offer sufficient support and may result in failure of the brick masonry supports. SIGIR brought this issue to the attention of GRS. After reviewing the issue, GRS responded:

The lintel detail shown on sheet S1 is a generic detail. Where the door or window fell close to the frame of the building and the required length of brick could not be obtained, one end of the lintel was doweled into the column for vertical support only. All free ends of lintels have more than the required 25cm. A detail of the individual lintel placements shall be provided.

GRS also provided a photograph of the drill and epoxy used to install the dowels¹² into the lintel. SIGIR reviewed the daily quality assurance (QA) and quality control (QC) reports to determine if dowels were utilized prior to the site visit. SIGIR did not locate a photograph documenting the use of a dowel for the cases where lintels did not have the required length of brick. In addition, during the site visit, SIGIR could not locate the dowel-installing equipment.

SIGIR believes that dowels, if properly utilized¹³, would provide the necessary support for lintels with less than 25cm of brick length. Since GRS is certifying that the contractor appropriately used dowels, then this issue has been adequately addressed.

Tie Beams

Due to the poor soil conditions at the project site, the contractor's design drawing S3 indicates that the slaughterhouse buildings will be primarily constructed on large strip footings along column rows A, B, C, and D with smaller spread footings for the miscellaneous project components. In addition to the strip footings, tie beams are proposed between each column in rows B and C to connect the two slaughterhouse buildings. These beams are detailed on the contractor's drawing S7 with information on their elevation, dimensions, and placement of reinforcement.

Tie beams are used to prevent independent movement of foundation elements during a seismic event. The granular soils of the Basrah area, with evidence of some clay deposits and the presence of groundwater, create a significant risk of liquefaction¹⁴ during a seismic event. If liquefaction occurs, independent movements of the foundation elements will likely result in significantly more damage to the structure.

SIGIR noted that the tie beams were not constructed between the two slaughterhouse buildings as required. Based on the contractor's details, the tie beams require continuous reinforcement through the concrete columns, which makes installation after the construction of the concrete columns impossible.

SIGIR brought this issue to the attention of GRS. After reviewing the issue, GRS responded:

S3 is a general detail section. These are not specific to one structure and are really a carryover from the 35% design. The original intent was to use independent spread footers which would require the tie beams as shown in the detail on sheet S-3. However since the soil properties were low, strip footers were used in lieu of independent spread footers. The strip footers can be seen on sheet S-6 through S-9 (footers 1-6). The strip footers are already tied together at the base and do not need additional tie beams as shown on sheet S-3 [Site Photo 5]. This detail shall be removed from the drawings in the as built drawings. The pictures below shows the base of the columns tied together with strip footers as designed.

¹² A dowel is a solid cylindrical rod. In reinforced concrete the dowels are typically steel rods. Dowels are used to transfer shear between adjacent concrete members.

¹³ "Properly utilized" means the length, number, and placement location of dowel bars cannot be arbitrary. Placement of dowels must not damage reinforcement of any existing structural element. Design calculations are based upon loads and forces which determine the length, number, and actual placement of embedded dowels. In addition, once the dowels are set in epoxy material, the pullout strength of embedded dowels is determined under field condition to obtain data for the design calculation.

¹⁴ Earthquake liquefaction is where loosely packed, saturated sediments lose their strength and stiffness from the intense shaking of an earthquake.



**Site Photo 5. Strip footers tied together at the base
(Courtesy of GRS)**

Intermediate Beams

After reviewing the structural details on drawing S3, SIGIR determined that the contractor's design lacked specific details for the intermediate beams for column lines A, B, C, and D. It appears that these beams are intended to brace the associated columns and tie them to the brick masonry. Based upon SIGIR's observations, it appears that the intermediate beams are generally placed at a height of approximately 2.5m from the finished floor level and are not tied to the columns.

Structural sheet S3 provides general details for the intermediate beams showing the general arrangement of reinforcement, and placement sequence. Specifically, the details indicate that the placement of the reinforcing steel for the beam is to be continuous through the column (Figure 10). This can only be achieved if the reinforcement for the beam is placed prior to casting the column.

Based on SIGIR's review of daily QA and QC reports, and observations made during the site visit, it does not appear that the contractor constructed the intermediate beams according to the approved design drawings. A photograph from a daily QA report shows form construction for columns without placement of intermediate tie beams in sequence as prescribed by the contractor's design drawings (Site Photo 6). No reinforcement is evident in this photograph extending through the column into the intermediate beam.

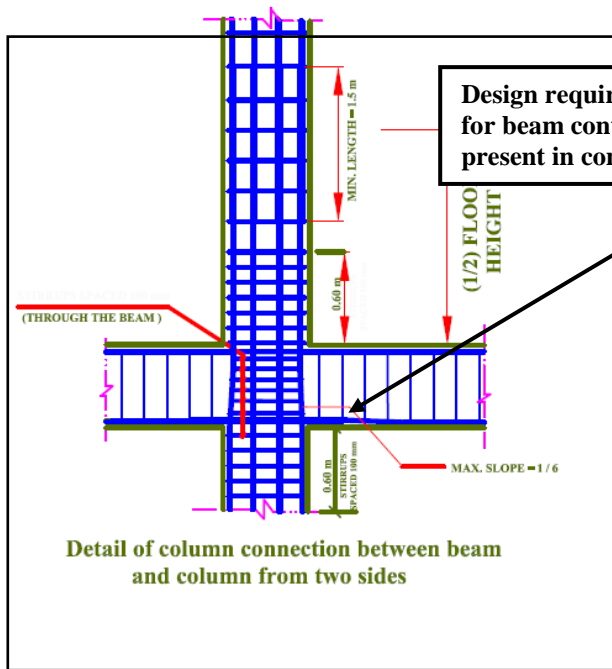


Figure 10. Structural design for intermediate beams



Site Photo 6. Form construction for columns without placement of intermediate tie beams (Courtesy of GRS)

During the site visit, GRS representatives stated that the contractor did not construct the intermediate beams according to the design drawings. The GRS representatives stated that the contractor omitted the reinforcing for the intermediate beams when casting the columns. After construction of the columns, the contractor used epoxy to anchor the reinforcing for the intermediate beams to the column.

Anchoring the reinforcement to the existing concrete with epoxy is a somewhat specialized process requiring strict quality control to achieve the design strengths claimed by the adhesive manufacturer. The process involves drilling holes to the depth and diameter specified by the manufacturer, meticulously cleaning the holes, mixing and inserting the adhesive, and inserting the rebar in such a way as to insure even and uniform coverage over the inserted length of the rebar. SIGIR did not observe drills with extended, large diameter masonry bits or the epoxy necessary to perform this procedure.

SIGIR's concern is that without the positive connection between the intermediate beams and the columns, as required by the contractor's design drawings, the reinforced concrete columns and the brick masonry infill may be overloaded. The intermediate beams should provide lateral stability to the columns, increasing their load carrying capacity. If the design of the columns relied on this support, they may be overloaded in their current configuration. It also appears that the intermediate beams were intended to carry the load of the upper panels of brick masonry infill. This intermediate support would relieve vertical load on the lower panel of brick infill and would halve the effective height of the wall, reducing the susceptibility of the brick masonry to buckling.

SIGIR brought this issue to the attention of the GRS. After reviewing the issue, GRS responded:

The tie beams shown on sheet S-6 were in conflict with the plumbing for the entire facility. The original design called for 2 five meter tall main structures tied together in the middle by a 3 meter tall bathroom area. With the conflict in plumbing the buildings were constructed as 2 independent main structures with

an independent bathroom built in the middle. This eliminated the need for tie beams shown on sheet S-6 and intermediate beams on S-11. This revision shall be provided.

There were no intermediate beams designed for column lines A or D. The intermediate beams that the details on S-3 show, were beams that were originally planned for column lines B and C only. These beams were for the bath room area that is directly between the 2 main structures and they would have been placed at the eve height of the bathroom shown in the architectural details as 3 meters. The beams that you [SIGIR] are referring to in the main structure are bond beams for the brick walls. Under the best seismic circumstances a non load bearing exterior masonry wall can only have an unsupported height/width to thickness ration of 18. For a 25cm wall this would mean a max 4.5 meter height and 4.5 meter max width. The bond beams, dowels for the columns, and wire fabric are there to provide support for the masonry walls as per IBC [International Building Code] 2006 section 21. A detail of the walls with the bond beams, dowels, and wire fabric shall be provided.

The only beams that are tied into columns are the beams at the top of all the structures. These are all tied in properly. Again the referral here is to the bond beams for the walls in the 2 main structures which are not intermediate beams as shown in the general detail.

The drawings for Column lines A and D never had intermediate beams (see Sheet S-11 beams B4) and the design calculations never had any intermediate beams...The overall structural design for the Basrah Modern Slaughter House was reviewed by a Licensed Structural Engineer [with the U.S. Army Corps of Engineers]....

GRS included a recent photograph of one slaughtering building showing the top beam and column connections with the bond beam for the walls in the middle (Site Photo 7). According to GRS, the middle beam is a bond beam/lintel only, not an intermediate structural beam.



**Site Photo 7. Slaughtering building with top beam and column connections
(Courtesy of GRS)**

SIGIR's primary concern is that the contractor did not construct the tie beams in accordance with the design drawings. This leaves the buildings without the required lateral support for the columns. However, with GRS's assurance that the contractor's overall structural design has been reviewed and approved by a licensed structural engineer, SIGIR considers this matter adequately addressed.

Project Quality Management

Contractor's Quality Control Program

Department of the Army Engineering Regulation (ER) 1180-1-6, dated 30 September 1995, provides general policy and guidance for establishing quality management procedures in the execution of construction contracts. The regulation states, "...obtaining quality construction is a combined responsibility of the construction contractor and the government."

The SOW required the contractor to perform QC by maintaining an adequate inspection system and performing inspections that ensure the work performed under the contract conforms to contract requirements. Specifically, the SOW required daily site work reports, which include work performed, number of workers on site, managers and supervisors on site, weather, materials procured and received, problems encountered, accidents, photographs, construction inspection reports, and testing and inspections reports. In addition, the SOW required the contractor to submit a QC plan identifying personnel responsible for QC, QC procedures, and a proposed daily QC report within 15 days of contract award.

The contractor submitted the QC plan on 20 September 2008, which identified key personnel responsible for QC, procedures for performing QC, and a proposed daily QC report.

The QC representatives monitored field activities and completed daily QC reports, which presented a brief background on the number of workers on site, as well as the work activities and testing performed. In addition, the QC representatives supplemented the daily QC reports with photographs reinforcing the information provided in the daily reports. However, the QC representatives did not identify any construction deficiencies or safety violations in the daily QC reports.

Government Quality Assurance

The USACE ER 1110-1-12 and GRD policy "Quality Assurance through Visits at Construction Worksites" specifies the requirements for a government QA program. Similar to the QC program, a crucial oversight technique is presence at the construction site.

The GRS Basrah Area Office (BAO) is responsible for construction oversight of the slaughterhouse project and employs local-national Iraqi engineers as QA representatives to visit the project site daily and write daily QA reports. In addition, BAO representatives periodically visited the project site to verify the contractor's work and mentor the local-national QA representatives.

Local-national QA representatives monitored field activities and prepare daily QA reports. The reports document the number of workers on site and the work performed for the day. Also, the QA representatives supplemented the daily QA

reports with detailed photographs that reinforced the information provided in the reports.

In April 2009, the QA representative identified a significant point in the daily QA reports:

There are [sic] no water Source or main electric source near the Slaughter house.

In addition, the QA representative identified construction deficiencies at the project site, such as the following:

[Contractor] Used rejected bricks in two fence partitions, contractor comply [sic] and starts to remove it.

The QA representative also identified safety issues at the project site. For example, common safety issues identified were the following:

- inadequate scaffolding
- workers not wearing personal protective equipment
- debris cluttered throughout the site

The QA representative brought these issues to the attention of the contractor with varying degrees of success. During the site visit, SIGIR noticed the project site cluttered with building materials, which posed tripping hazards to the contractor's crew and any visitors to the site. Specifically, nails from broken down formwork boards, combined with multiple tripping hazards, increase the likelihood of injury or death (Site Photos 8 and 9).



Site Photo 8. Project site littered with building materials



Site Photo 9. Protruding nails from formwork boards

SIGIR reviewed the daily QA reports and found that the QA representatives did an effective job identifying and correcting construction deficiencies at the project site. However, the QA representative must continue to encourage the contractor to practice safe-working procedures in order to avoid injuries.

Project Sustainability

The contract included a number of sustainability elements to assist the Director General of Health for the Basrah province in operating this project after turnover:

Commissioning

The contract requires a complete set of commissioning procedures and test sheets prior to commissioning. All test equipment must be fit for use and calibrated. Testing and commissioning include all labor, materials, tools, testing devices, engineering support in order to support a complete in service transfer of the utilities to the local system according to the appropriate ministry standards, including any acceptance tests performed by the appropriate ministry prior to turn-over.

Warranties

The contractor is required to provide and certify warranties in the name of the appropriate ministry of all materials or equipment—including any mechanical, electrical, and/or electronic devices—and all operations for 12 months after the date of transfer.

Warranty of Construction Work

The contract references FAR clause 2.246-21 “Warranty of Construction,” which provides a warranty for construction work to continue for a period of 1 year from the date of final acceptance of the work. If the government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the government takes possession.

Operations and Maintenance Support

The contract requires the contractor to provide operations and maintenance (O&M) of the facility for 90 calendar days. In addition, the contractor must submit two O&M manuals in Arabic and English to GRS for review and acceptance prior to the start-up of any new pumps and motors. The O&M manuals include standard operations procedures for all equipment and systems, and standard maintenance procedures and recommended spare parts list for all equipment. Further, the contractor must provide four weeks of training for the operators on the project.

Spare Parts

The contractor is required to provide all spare parts for one year of project operations. In addition, the contractor must provide all chemical materials and replacement filters for 90 calendar days of continuous operations.

Submittals

The contract contractor is required to provide submittals, which include the contractor or manufacturer’s drawings, catalogue cuts, diagrams, operating charts, test reports, test cylinders, certifications, and warranties.

As-built Drawings

The contract required the submission of six hard copies and six copies on CD/DVD of all as-built technical information and drawings within 30 days of project turnover.

Lack of Utilities

While the contract addressed sustainability from a standpoint of construction warranties and spare parts, the remainder of the project suffers from a complete lack of adequate planning. The location of the project site is in an uninhabited area outside the Basrah City limits. Within two weeks of the contract's award, GRS tasked its Reconnaissance Liaison Team (RLT) to perform an assessment of the project site. Specifically, the RLT's assessment was to include the following:

- routes to the project site
- existing condition of the project
- local atmospherics in the area
- utilities
- site security

Though not trained engineers, the RLT identified significant concerns, such as the following:

- project site is situated within a flood plain area; the surface is soft under foot and the soil is composed of clay at a depth of 50cm
- routes to the project site are limited
- closest known electrical power source is the Az Zubayr Transformer station
- closest water source has not been identified

In November 2008, GRS addressed the issue of the project site being located on a flood plain by moving the location approximately one mile north; however, the critical issue of no close or known utilities was not addressed. This facility, when completed, will require a significant amount of electricity to operate the new equipment; potable water for human consumption and cleaning; and sewage and blood disposal.

GRS explained the origin of this project was developed through the Provincial Reconstruction Development Committee¹⁵. By the time GRS became involved in the project, the project site had already been determined. GRS stated that it advised the Basrah Provincial Reconstruction Team (PRT)¹⁶ early on that the location of the project site was unsustainable due to the lack of power, potable water, and sewage disposal. According to GRS representatives, the Basrah PRT stated that the location was picked by the Basrah Governor. GRS said the Basrah PRT promised to work with the Basrah Provincial Council to provide utilities to the project site. SIGIR reviewed the project file and could not locate e-mails or written memorandums documenting these conversations. GRS representatives stated that former GRS representatives who worked on this project may have saved the e-mails to their personal accounts and not included them in the project file.

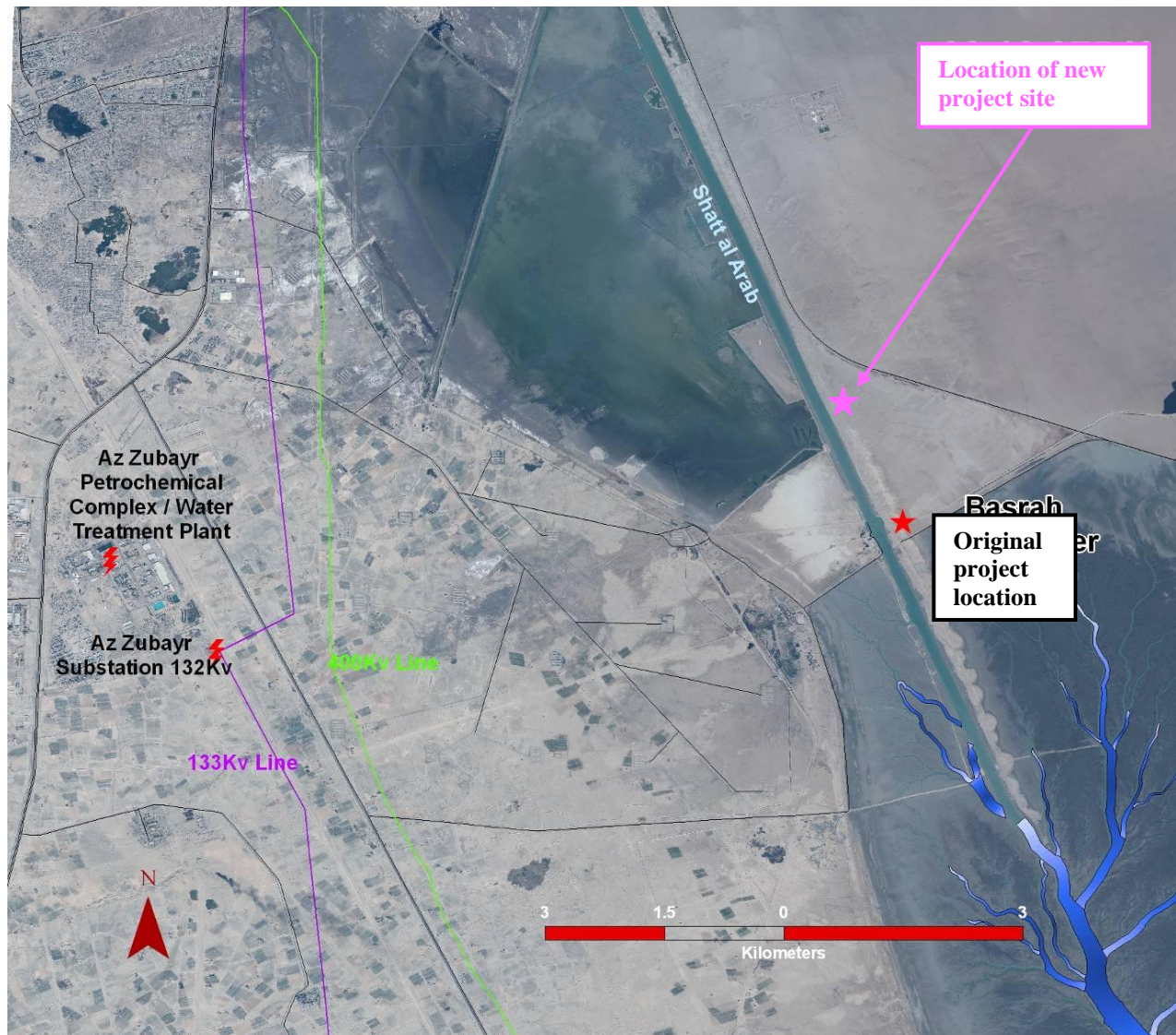
To date, more than 19 months after the awarding of the contract, a potential source of permanent power, potable water, or sewage and blood disposal has not been identified. As a GRS representative stated: *"The Iraqi government has not made any further commitments to provide utilities to the site."*

¹⁵ Through the Provincial Reconstruction Development Committee, the Department of State and U.S. Army Corps of Engineers work with Iraqis in the provinces to develop proposals and undertake small-scale projects, such as building schools, repairing roads, and developing water facilities.

¹⁶ The U.S. government created PRTs to provide expertise and assistance to Iraqi provincial leaders. Specifically, the goal of PRTs is to empower local provincial governments to govern their constituents more effectively.

Electrical Power

Without reliable permanent power, the facility must depend entirely on generator power. According to GRS documentation, the closest electrical power source is the Az Zubayr substation, approximately 8km away (Figure 11). According to GRS representatives, the GoI has not agreed to connect the project site to this substation. In addition, the contractor's design submittals did not address the amount of power required to operate the entire facility at full or reduced capacity. The intent of this project is to construct a "modern" slaughterhouse, which includes contemporary machinery drawing a considerable amount of electrical power. The SOW required only a single 450 kilovolt-ampere (KVA) generator for backup power only, not to provide enough power to permanently sustain operations. Insufficient power to operate the entire facility could result in spoiled or contaminated food (if, for example, the cold storage room was not operating). The contractor's submittals also do not address the amount of fuel required to sustain full or reduced capacity. Even if the amount of fuel needed is determined there is no U.S. government contract in place or commitment from the GoI to provide fuel.



**Figure 11. Location of the project site from the nearest electrical power source
(Courtesy of GRS)**

Potable Water

According to the RLT's report, the nearest source of potable water could not be identified. Nearby Iraqi police checkpoints require potable water to be delivered daily. Readily available potable water for a slaughterhouse is essential for several reasons. First of all, the workers at the slaughterhouse will need potable water for consumption, especially during the extreme summertime heat, and for washing their hands before and after handling animals and equipment. Careful and frequent hand washing will do much to reduce possible food contamination. Also, potable water is critical for the cleaning of animals prior to slaughter and cleaning of equipment and rooms after slaughter. The availability of potable water will allow for cleaning procedures to be instituted in a way which assures hygienic products. However, the use of non-potable water introduces microorganisms to slaughter equipment and rooms, which significantly increases the risk of contaminated meat.

The contractor's submittals do not include any calculations for the daily amount of potable water estimated to be required for full operation of the slaughterhouse. Regardless of the amount of potable water needed to operate the facility, the GoI will be responsible for delivering it daily. This will be a challenge since the site is in a remote area with limited road access. At this time, there is no commitment from the GoI to provide potable water to the slaughterhouse. The lack of potable water will result in either the slaughterhouse not operating or potentially exposing the citizens it serves with contaminated meat products.

Sewage and Blood Disposal

Since the project site location is in a remote area, there are no existing main sewer lines in which to dispose of the slaughterhouse's various forms of waste, such as sewer water, storm water, and animal blood. As mentioned in the Design section of this report, the contractor split waste disposal into three separate systems—a septic holding tank, storm water runoff storage tank, and blood storage tank. The septic holding tank includes an outlet for a septic truck to empty the tank. However, at this time, there is no commitment from the GoI to regularly empty the septic tank. In addition, it is unknown if the GoI has the capacity to regularly empty the septic tank.

Also mentioned in the Design section of this report is the fact that after reviewing the contractor's designs, SIGIR still could not definitively determine the end result of the blood and water from the trench drains. The storm water system includes a series of manholes and inlets directing storm water runoff to an underground storage tank. However, the contractor's design provides no details of the tank and there is no indication of how the storm water storage tank will be emptied.

Basrah Provincial Reconstruction Team Efforts

SIGIR contacted the Basrah PRT to determine if the capacity existed within the Basrah provincial government to provide permanent power, fuel, potable water, and wastewater services continuously for the slaughterhouse project once construction is completed. The Basrah PRT responded:

We have done much work to get Iraqi authorities to round out the elements needed to make this project work. I think that things are falling into place....

In late March 2010, as this draft report was being prepared, the Basrah PRT provided SIGIR documentation indicating that the GoI was building a new, 11,000 m² slaughterhouse contiguous to the U.S. government-funded slaughterhouse. According to

the PRT, the two slaughterhouses are “being constructed side by side with a common fence being constructed around them.”

PRT representatives made a recent visit to the slaughterhouse sites and noted that plans were in place to provide utilities to the two slaughterhouses. Specifically, the PRT informed SIGIR that the Basrah Municipality Directorate submitted a BOQ to the Basrah Governorate Council for \$2.2 million for a mobile electric substation and cable from the nearest power source (13 km away) to the project site.

For water, the PRT indicated that the only water source is approximately 8km away from the project site and is currently out of service. The PRT also reported that the revised plan to supply water to the project site is to use untreated water from the adjacent Shatt Al Basrah Canal.

With respect to wastewater service, the PRT report noted that each of the slaughterhouses will have a waste treatment system and the GoI will install a line from both slaughterhouses to the Shatt Al Basrah Canal.

SIGIR noted and the PRT report confirmed that utilities were not currently available at the project site. In addition, the proposed electrical project has not been approved by the Basrah Governorate Council, and even when approved, it will take considerable time to install and connect to the slaughterhouses. It will also require the impractical transmission of 220/440 volt electricity for some distance and the addition of an electrical transformer at the project site.

With regards to potable water for the slaughterhouse, the PRT site visit confirmed that the nearest potable water source is 8 km away and out-of-service. There is apparently no plan by the GoI to repair this non-operational source; therefore it is not an option for potable water. The plan to use untreated water from the Shatt Al Basrah Canal will be challenging. The U.S.-funded slaughterhouse project did not provide for an inlet from the canal. Consequently, additional U.S. or GoI funding will be required for the piping and the pump station necessary to draw water from the river to the slaughterhouses. Also, an assessment of the Shatt Al Basrah Canal would be required to determine the quantity and quality of water that is available throughout the year. The canal water is reported to be salty and briny, which when fed into the reverse osmosis system, will denigrate the filters quickly.

Further, the PRT stated that both slaughterhouses have sewer systems and treatment units. The current plan to dispose of the treated waste is to construct a channel from the project site to the Shatt Al Basrah Canal. Unfortunately, according to the contractor’s designs, the U.S.-funded slaughterhouse does not have a water treatment unit; instead it has wastewater holding tanks. Moving the contents of the wastewater holding tanks to the Shatt Al Basrah Canal will result in the disposal of untreated wastewater into the canal, which will pose a significant health risk. As mentioned earlier in this report, the contractor’s design does not address any treatment for blood products; instead blood is simply collected in storage tanks. The disposal of untreated blood in the canal would create a health risk.

Future Concerns—Power, Fuel, Water, and Septic Systems

The lack of reliable permanent power and potable water for the slaughterhouse will significantly challenge operation of the facility after construction is completed. Reliable power is essential for operating the various pieces of slaughtering equipment, as well as, the cold storage rooms, waste processing equipment, laboratory, and miscellaneous

ancillary facilities. Calculations were not provided for the amount of permanent power (or generator power, if permanent power is not available) that would be required to operate the facility (in lieu of permanent power); however, SIGIR does not believe the contract-required single 450KVA generator will be sufficient. In addition, there is no contract or commitment from the GoI to regularly provide fuel for this generator.

An adequate supply of potable water is critical to operating the slaughterhouse in a hygienic manner. The lack of potable water should cause operations to cease for fear of potentially contaminated meat products.

The treatment and disposal of waste products, such as wastewater and animal blood, is vital to keep the slaughterhouse operating in a sanitary environment. This will require the regular emptying of the septic holding tank and the proper treatment and removal of animal blood. There is no commitment from the GoI to regularly empty the septic holding tank. In addition, the contractor's designs are not specific as to the final destination of the animal blood.

Basrah PRT representatives have engaged Iraqi officials with respect to the utilities needed for this project. However, prior to discussions with the GoI, the U.S. government needs to determine the amount of permanent power/fuel, potable water, and septic removal that will be required. Yet, this is complicated by the fact that the contractor's submittals do not address these issues. Even after the slaughterhouse's needs are determined, securing commitments from the GoI to provide fuel, potable water, and septic removal will be extremely difficult considering the project site is located approximately 13km from the outskirts of Basrah.

The lack of any one utility – permanent electrical power/fuel, potable water, or waste and blood removal – will render the slaughterhouse inoperable.

Conclusions

1. Determine whether project components were adequately designed prior to construction or installation.

Overall, the contract's SOW and design submittals were not adequate to properly construct the slaughterhouse facility. The SOW required the contractor to design and construct an approximately 6,000m² sheep and cattle slaughtering facility. However, the SOW did not define what a "facility" is, which left the interpretation of the word up to the contractor and GRS representatives. Recently, GRS stated that it believed the 6,000m² "facility" meant the entire parcel of land with a slaughterhouse structure *"considerably less than 6000 [m²] but it is the Centerpiece of the 6000 [m²] FACILITY..."* However, this contention contradicts the contract, SOW, and BOQ, which required a substantially larger facility. Several other GRS representatives, including the project's construction representative, believed the contractor's initial *"plans indicate a facility that is less than 25% the size of what the contract calls for...I am not going to allow the contractor to proceed unless he adjusts his plans accordingly. If the contractor refuses, this contract will be in a T for D [termination for default] circumstance."*

In addition, the SOW included two conceptual designs for similar facilities and required the contractor to provide twice the slaughtering operational area of the buildings being constructed. However, upon review, SIGIR found GRS provided two completely different types of slaughterhouse facilities as conceptual designs. One

conceptual drawing indicates one slaughtering building; while the other conceptual drawing showed two slaughtering buildings. After reviewing the SOW and conceptual drawings, several GRS representatives concluded *“the SOW calls for the ‘operational area’ to be twice the dimensions of the conceptual drawings. The dimensions of the conceptual drawings provide for an operational area of 1,728 sq. meters. Your [contractor’s] design shows an operational area of 840 sq. meters. This amount is about half of the area required by the contract.”* However, GRS approved the contractor’s design.

The project site was moved in November 2008 because the original site was located on a flood plain. This move drastically reduced the overall project size. The original BOQ required the contractor to prepare a site of 15,877m² and construct an overall building area of 3,248m²; however, after the location changed, the project site was reduced to 6,000m² and an actual building area of 2,141m². GRS did not attempt to negotiate an equitable price adjustment for the significant amount of work de-scoped from the project. For example, a GRS representative who approved the contractor’s submittal stated that the *“only thing eliminated due to smaller lot size is the landscaping.”*

In addition, the SOW required a perimeter fence of 500m; however, the smaller lot size reduced the perimeter fence to 320m. In neither case did GRS attempt to negotiate an equitable price adjustment with the contractor for an obvious decrease in the amount of work required.

The contract contained specific references to any contractor proposed variations from the contract requirements. For example, the SOW also specifically stated: *“No changes to the work described in this scope of work shall be made unless approved in writing by the contracting officer.”*

SIGIR reviewed the project file GRS provided for legal analysis or written justification for the decision to approve the contractor’s submittals. Considering the contractor submitted a design for significantly less than what the contract required, SIGIR questions how this is “desirable and beneficial” to the U.S. government¹⁷. Since the FAR and SOW required written justification and a contract modification for any proposed contract variation, SIGIR is concerned that GRS may be in violation for not justifying the significant de-scope of work required by the contractor. In addition, since GRS did not seek equitable price adjustment from the contractor, SIGIR believes the U.S. government considerably overpaid the contractor for this project.

After reviewing the contractor’s 100% design drawings and related construction documentation, SIGIR found it to be unacceptable for initiating construction. Specifically, the 100% drawings were incomplete and riddled with inaccuracies, omissions, and unapproved changes. Typically, a slaughtering and meat processing facility uses a significant amount of wash down water to maintain the facility’s cleanliness. From the contractor’s S-2 drawing, it appears the trench drains intercept the runoff from the production floor of the facility. The drawings further indicate that this drain is directed to blood storage tanks on either side of the facility. The contractor did not provide sizing calculations for the blood storage tanks, conveyance lines, or processing equipment; therefore, SIGIR could not determine if the tanks,

¹⁷ The “General Specifications” section of the contract required the contractor, “when proposing variation, deliver written request to the contracting officer, with documentation of the nature and features of the variation and why the variation is desirable and beneficial to government...”

lines, or equipment were appropriately sized for the current and future capacity of the facility. In addition, the storm water system includes a series of manholes and inlets directing runoff to an underground storage tank. However, there are no details of the tank, including any indication as to how the storm water storage tank will be emptied. Further, the SOW required the construction of two guardhouses with electrical fixtures and plumbing. However, on the contractor's 100% "Site Power Distribution Plan," there is only one guardhouse. As a result of this omission, the 100% plan obviously does not illustrate the required electrical connections or fixtures to this guardhouse.

Based upon the review of the contract, contract modification, SOW, GRS e-mails, and contractor submittals, the contract and SOW were so poorly written and so confusing that four of GRS's representatives, including the project's construction representative, misunderstood the requirements. In addition, it appears the contractor has been overpaid for the work performed.

2. Determine whether construction or rehabilitation was in compliance with the standards of the design.

At the time of the site visit, the project was approximately 45% complete; consequently, construction work on the slaughterhouse was still ongoing. During the site visit, SIGIR identified examples of construction not according to the contractor's design, such as the placement of lintels, tie beams, and intermediate beams.

The contractor's design required the slaughterhouse buildings be primarily constructed on large strip footings along column rows A, B, C, and D, with smaller spread footings for the miscellaneous annexes. SIGIR noted that the tie beams were not constructed between the two slaughterhouse buildings. Based on the contractor's design details, the tie beams require continuous reinforcement through the concrete columns, which makes installation after the construction of the concrete columns impossible. GRS responded that the *"original intent was to use independent spread footers which would require the tie beams as shown in the detail on sheet s-3. However since the soil properties were low, strip footers were used in lieu of independent spread footers...This detail shall be removed from the drawings in the as built drawings...."*

3. Determine whether adequate quality management programs were being utilized.

The contractor's QC representatives monitored field activities and completed daily QC reports, which presented a brief background on the number of workers on site, as well as the work activities and testing performed. In addition, the QC representatives supplemented the daily QC reports with photographs reinforcing the information provided in the daily reports. However, the QC representatives did not identify any construction deficiencies or safety violations in the daily QC reports.

Local-national QA representatives monitored field activities and completed daily QA reports. The reports documented the number of workers on site and the work performed for the day. Also, the QA representatives supplemented the daily QA reports with detailed photographs that reinforced the information provided in the reports. In addition, the QA representatives identified significant issues affecting the future operation and use of the project. For example, in April 2009, the QA representative noted that *"There are [sic] no water Source or main electric source near the Slaughter house."* Further, the QA representatives identified construction deficiencies at the project site, such as when the contractor *"Used rejected bricks in two fence partitions, contractor comply [sic] and starts to remove it."* The QA representative also identified safety issues at the project site. However, SIGIR noticed safety issues such as the project site cluttered with building materials, which posed a

tripping hazard to the contractor's crew and any visitors to the site. Specifically, nails from broken down formwork boards, combined with multiple tripping hazards, increase the likelihood of injury or death.

4. Determine if sustainability was addressed in the contract or task order for the project.

The contract included a number of sustainability elements to assist the Director General of Health for the Basrah province in operating this project after turnover, such as warranties, spare parts, and O&M support.

However, while the contract addressed sustainability from a standpoint of construction warranties and spare parts, the remainder of the project suffers from a complete lack of adequate planning. This facility, when completed, will require a significant amount of electricity to operate the new equipment; potable water for human consumption and animal cleaning; and sewage and blood disposal. Reliable permanent power is essential for operating the various pieces of slaughtering equipment, as well as, the cold storage rooms, waste processing equipment, laboratory, and miscellaneous ancillary facilities. An adequate supply of potable water is critical to operating the slaughterhouse in a hygienic manner. The treatment and disposal of waste products, such as wastewater and animal blood, is vital to keeping the slaughterhouse operating sanitarily. The lack of any one utility – permanent electrical power, potable water, or waste and blood removal – will render the slaughterhouse inoperable.

To date, more than 19 months after the awarding of the contract, neither GRS nor the contractor knows a potential source of permanent power, potable water, or sewage and blood disposal for the slaughterhouse. A GRS representative stated the *“Iraqi government has not made any further commitments to provide utilities to the site.”*

Basrah PRT representatives have engaged Iraqi officials with respect to the utilities needed for this project. However, prior to discussions with the GoI, the U.S. government needs to determine the amount of permanent power (or fuel to operate the generator), potable water, and septic removal that will be required. Yet, this is complicated by the fact that the contractor's submittals do not address these issues. Even after the slaughterhouse's needs are determined, securing commitments from the GoI to provide permanent power/fuel, potable water, and septic removal will be extremely difficult considering the project site is located approximately 13km from the outskirts of Basrah.

5. Determine if project results were or will be consistent with their original objectives.

To date, the Basrah Modern Slaughterhouse project results are not consistent with the original contract objectives. While the project, when completed, will provide the Az Zubayr district with a sheep and cattle slaughterhouse facility, the limitations of the contractor's submittals and the lack of reliable utilities, such as permanent power (or fuel for the generators), potable water, and sewer and blood removal service, will significantly challenge the operation of the facility. Specifically, the contractor's submittal did not calculate the amount of electrical and/or generator power and potable water necessary to operate the facility or the amount of sewer water and blood generated for disposal. Determining these amounts are critical before the Basrah PRT can adequately engage the GoI in an attempt to gain a commitment to provide these services in support of the slaughterhouse facility.

Recommendations

SIGIR recommends that the Commander, Gulf Region District of the U.S. Army Corps of Engineers, take these actions:

1. Resolve the design deficiencies, omissions, and areas of concern with the contractor to guarantee that the project is adequately designed.
2. Perform a review of the contract file to ensure compliance with all Federal Acquisition Regulation provisions and the terms of the contract.
3. Require the contractor to provide calculations determining: the amount of electrical power and potable water necessary to operate the facility, and the amount of sewer water and blood generated for disposal.
4. Seek equitable price adjustment from the contractor for all de-scoped or modified work performed.

To protect the U.S. government's investment of approximately \$5.6 million, SIGIR recommends that the Basrah PRT continue its coordination with the GoI to include efforts to provide the slaughterhouse with the necessary utilities.

Management Comments

SIGIR received United States Forces-Iraq (USF-I)-approved comments from GRD on the draft of this report. GRD commented that SIGIR did not use official documentation, but instead used information and documentation from: (1) the original plan costing in excess of \$13 million; (2) working level documents; and (3) discussions pertaining thereto, to perform much of its analysis. GRD stated that this resulted in multiple errors in SIGIR's interpretation of what the contract required. GRD further opined that properly and adequately vetting the information and ensuring that SIGIR received official documentation would have provided a more reliable data source and resulted in more accurate conclusions than using information from an obsolete plan and working level documentation. However, GRD concurred with Recommendations 1 and 2; reported that it had additional documents that resolved Recommendation 3; and did not concur with Recommendation 4. GRD also provided specific comments on information in the draft of this report. The complete texts of the GRD comments are provided in Appendix C.

SIGIR received comments from the U.S. Embassy's Office of Provincial Affairs affirming that the Basrah PRT will continue its normal coordination with the GoI and that those efforts will include efforts to provide the slaughterhouse with the necessary utilities.

Evaluation of Management Comments

Evaluation of Response to Recommendations

SIGIR appreciates the concurrence by the U.S. Embassy's Office of Provincial Affairs with SIGIR's recommendation to them and the concurrence by GRD with Recommendations 1 and 2. These recommendations are resolved.

GRD stated that Recommendation 3, which required the contractor to provide calculations for the amount of water and electrical power to operate the facility and the

amount of sewer water and blood generated for disposal, has been resolved because the contractor provided such documentation to the GRS headquarters. While limited additional information was provided to SIGIR by GRD after the issuance of our draft report, SIGIR requests that documentation and calculations determining the amount of electrical power and potable water necessary to operate the facility, and the amount of sewer water and blood generated for disposal be made available to SIGIR and to the GRS's Basrah Resident Office (BRO) which did not have such documentation at the time of SIGIR's site visit.

GRD did not concur with Recommendation 4, which required GRD to seek equitable price adjustment from the contractor for all de-scoped or modified work performed. GRD stated that the "...government is not due an equitable adjustment for the operational area, the site preparation work, or the perimeter fencing, as the contractor complied with the statement of work's requirements."

SIGIR does not understand the basis for GRD's assertion that the government is not due an equitable price adjustment from the contractor. When the project site location was changed in November 2008, the slaughterhouse project was moved to a significantly smaller sized lot. This reduced the requirement for a perimeter fence from 506m to 320m and site preparation work from 15,877m² to 6,000m². Consequently, the contractor performed less work than originally required.

GRD referred to contract file documentation that either eliminated or resolved SIGIR Recommendation 4. However, neither GRD nor GRS provided this documentation to SIGIR for review. For example, GRD referred to the contractor's Proposal Cost Breakdown; however, GRD did not provide this document to SIGIR for review. As a result, SIGIR cannot verify the existence or adequacy of the alleged documentation GRD used as the basis for their non-concurrence with SIGIR Recommendation 4. As a result, SIGIR requests that GRD provide the contract file documentation that GRD feels either eliminated or resolved SIGIR Recommendation 4.

GRD Comments on Information in the Draft Report.

Overall GRD Comment. Initial customer requirements were for a \$13-plus million facility; significantly greater than the amount the National Embassy Team funded. To implement the project, the scope had to be significantly reduced. SIGIR obtained and used documentation from the original requirements. As a result many of their conclusions did not reflect the contract's actual requirements. The final project was awarded for less than half the amount of the original estimate.

SIGIR Response. As indicated on page 3 of this report the documentation provided to SIGIR by GRD's BRO was for firm-fixed-price contract W917BK-08-C-0063, funded by the Economic Support Fund in the amount of \$5,635,000, awarded to a local contractor on 31 August 2008 by the USACE GRS. The BRO project file documentation provided to SIGIR did not contain the "initial customer requirements" for a \$13-plus million facility to which GRD refers; instead the BRO project file documentation included the contract, SOW, and design drawings for the \$5,635,000 slaughterhouse facility.

GRD Comments on Outdated Documentation, Improperly Vetted Information. GRD disagreed with several conclusions reached by SIGIR. Specifically, GRD stated that SIGIR, when reaching its conclusions, relied upon outdated "working level documents" because SIGIR, "...did not visit the GRS Headquarters nor did they request

from them information pertaining to the project. They visited and requested all their information from the resident office.”

In addition, GRD charged that SIGIR was responsible for, “...*properly and adequately vetting the information and ensuring that they received official documentation would have provided a more reliable data source than using information from an obsolete plan and working level documentation and resulted in more accurate conclusions.*”

SIGIR Response. Over the past 5 years, the SIGIR Inspections Directorate has completed 170 project assessments; with the construction management of the majority of those projects done by GRD. The GRD established procedures to ensure that the appropriate GRD representatives responsible for the projects were identified and provided for an initial entrance conference at GRD headquarters in Baghdad, Iraq. At the entrance conferences, which includes GRD headquarters and the subordinate district representatives GRD deems appropriate, SIGIR identifies the specific projects being assessed and the objectives of the assessments. In addition, SIGIR requests the documentation necessary for each project assessment including:

- contract and contract modifications
- Statements of Work
- design documents
- test results
- quality assurance and quality control reports

GRD Headquarters’ representatives task the specific district or other subordinate office responsible for the project to provide this documentation to SIGIR. After the entrance conference, SIGIR travels to the respective district office or other subordinate office responsible for the individual project. At those offices, SIGIR again identifies the project and objectives for each assessment.

SIGIR’s assessment of the Basrah Modern Slaughterhouse project included an entrance conference with GRD in Baghdad on 27 September 2009, a combined joint entrance conference with the BRO in Basrah, Iraq, which GRS headquarters participated in via conference call on 28 September 2009, and an additional entrance conference with GRS headquarters¹⁸ at Tallil Air Base on 1 October 2009. At all three entrance conferences, SIGIR requested the above-mentioned project documentation to assist in the project assessment. At the entrance conference with the BRO on 28 September 2009, a BRO representative provided SIGIR with a DVD containing what he said was the “entire project file documentation.” During the entrance conference with GRS headquarters on 1 October, 2009, their representatives did not mention the existence of any additional project file documentation.

GRD’s assertion that multiple errors in SIGIR’s draft report resulted from use of unofficial documentation that was not properly and adequately vetted is all the more confusing in view of the fact that SIGIR reported its concerns about the design and sustainability of the Basrah Modern Slaughterhouse project to GRD in weekly status reports and briefings provided from 4 October 2009 to the date of this report. In addition, SIGIR has exchanged 15 or more e-mail messages with GRD and their subordinate offices detailing SIGIR’s concerns with the design of the facility. A number of those e-mail exchanges included attachments that were provided to SIGIR by GRD, which GRD now seems to assert were not official documentation. In

¹⁸Also known as the Adder Area Office.

addition, during the e-mail exchanges, neither GRD nor the subordinate offices mentioned the existence of a complete set of contractor design drawings allegedly located in GRS headquarters at Tallil Air Base.

SIGIR could rely only upon the documentation provided by the GRS's Basrah Resident Office and represented to SIGIR as the entire project file documentation. Unless the BRO specifically told SIGIR the documentation provided was not properly and adequately vetted, it is unrealistic to conclude that SIGIR somehow should have known this. Further, SIGIR questions why the GRS headquarters did not provide any documentation to SIGIR during the entrance conference on 1 October 2009.

If GRD's assertions are correct, now, seven months after SIGIR's entrance conferences with GRD, GRS and BRO representatives and the delivery of SIGIR weekly status reports and e-mail messages raising concerns about project design and construction, and the issuance of a draft of this report detailing SIGIR concerns with design and construction, SIGIR still has not been provided with official project and contract file documentation for this project. Because SIGIR still does not have official project and contract file documentation, SIGIR has no basis for revising the information provided in this report.

GRD Comments on Official Contract File. GRD stated that the *“Contracting Office at GRS headquarters maintained the official contract file and the set of drawings that were referenced in the solicitation's statement of work.”*

SIGIR Response. SIGIR takes the GRD comment to mean that the BRO, which is responsible for day to day construction management of the slaughterhouse project, does not possess the most current project file documentation, including the contract file and most current set of drawings; instead the BRO is relying upon documentation that GRD refers to as “unofficial data.” SIGIR questions the ability of the BRO to adequately determine whether the contractor is performing as required by the terms of the contract since the GRS Contracting Officer has apparently not provided this critical documentation to the BRO.

GRD's reference to its own resident office's documentation as “unofficial data” confirms SIGIR's original conclusion that the contract and SOW for this project are poorly written and confusing because GRD believes its own resident office, responsible for managing construction execution, misunderstood the requirements.

GRD Comments on SIGIR Use of Unofficial Data. GRD's comments also focused on specific statements made in the draft report. In GRD's opinion, the draft report contained several errors due to SIGIR's use of “unofficial data” provided by the BRO. GRD criticized SIGIR for not visiting the GRS headquarters or “requesting from them information pertaining to the project.”¹⁹

SIGIR Response. GRD does not address the fact that the BRO provided SIGIR with the “unofficial data;” therefore, the BRO presumably did not have the official contract data either. GRD stated multiple times that the official contract file and design drawings resided at GRS headquarters. This suggests that, like SIGIR, the BRO did not request a copy or GRS headquarters did not authorize the BRO to have

¹⁹ As mentioned earlier, SIGIR did, in fact, visit the GRS headquarters in Baghdad on 27 September 2009 and requested the project file documentation.

a copy of the official contract file. In either case, did GRS headquarters know that the BRO, which is responsible for day to day construction management of the Basrah Modern Slaughterhouse project, possessed outdated working level documents?

GRD Comments on SIGIR Use of E-mail Messages. GRD also commented that SIGIR incorrectly referenced e-mail messages between GRS headquarters and BRO representatives because the BRO representatives cited contract requirements that were not part of the official contract file. Specifically, GRD referenced the draft report in which SIGIR quoted e-mails from the project's construction representative stating the following:

- "...the SOW calls for the 'operational area' to be twice the dimensions of the conceptual drawings. The dimensions of the conceptual drawings provide for an operational area of 1,728 sq. meters. Your [the contractor's] design shows an operational area of 840 sq. meters. This amount is about half of the area required by the contract."
- "In section 4.2.11 of the SOW, it states that the KTR [contractor] shall 'provide labor, equipment and material to build the 500m walls of the fence with 24cm...etc.' The KTR's current design requires only 320m of perimeter fence."

According to GRD, the "conceptual drawing to which the construction representative was referring was not the conceptual drawing on which the contractor bid. The construction representative referenced an older conceptual drawing (figure 3 on page 7 of the report), not the official drawings. The older conceptual drawing which was never included in the contract contained two slaughterhouses..."

SIGIR Response. GRD's explanation documents the confusion resulting from the fact GRS headquarters did not provide the BRO with the official contract file and design drawings. Instead, GRS headquarters allowed this project to be delayed as the BRO tried to identify what the contractor was required to do. SIGIR's draft report quoted a GRS headquarters resident engineer who summed up the bewilderment of the BRO when he stated that there "...*was confusion regarding what is actually required for the project.*" In addition, GRD's comments do not provide any rationale for why GRS headquarters kept the official contract file and design drawings from BRO.

GRD Comments on Adequacy of Construction. GRD took issue with the draft report's statement that the contractor did not provide sizing calculations for the sewer collections system and did not address the location of blood separation and coagulation system. GRD stated that, "*Our review of the contractor's water calculations showed the sewer design, wastewater network, and storm water network. Drawing P-6 (Washing Water Network) cleared [sic] showed the blood separation and coagulation system.*"

SIGIR Response - Calculations. GRD provided additional calculations after the issuance of the draft report. These calculations included estimates for potable water usage and sewer generation; sizing of water and sewer distribution lines; and storm water runoff and conveyance calculations. After reviewing the calculations, SIGIR noted several issues, such as the following:

- The potable water calculations indicate 700 animals slaughtered per day; however, the previously received Heating, Ventilating, and Air Conditioning calculations indicated a total of only 24 slaughtered cows would be held in cold

storage, raising the question of how the other 676 slaughtered animals per day would be stored.

- The sanitary sewer calculations include sizing of a sewer pump station; however, no pump station is indicated anywhere on the contractor's plans.
- The storm water runoff calculations are for a 27,000m² site; however, according to "official data," the project site is 6,000m².

As a result of the above-referenced errors and the fact that the calculations provided are not labeled, SIGIR could not be certain these calculations are for the Basrah Modern Slaughterhouse project.

SIGIR Response - Drawings. Further, GRD's comments reference contractor drawing P-6 (Washing Water Network). This drawing was not part of the documentation package provided by the BRO to SIGIR. GRD did not provide this drawing to SIGIR; therefore, SIGIR cannot verify the existence or adequacy of this alleged document.

SIGIR Response – Sewer Collection System. Finally, GRD's comment regarding the Sewer Collection System highlights several significant SIGIR concerns. First of all, the BRO does not have contractor drawing P-6, which according to GRD, shows the "blood separation and coagulation system." The absence of this drawing will limit the ability of BRO to provide adequate oversight of construction of the Sewer Collection System. In addition, SIGIR, in the draft report, identified numerous critical omissions with the contractor's design drawings that GRD did not specifically address. For example, SIGIR wrote:

"The contractor's drawing S-5 shows the blood storage tank contents conveyed via a 200 millimeter pipe to the "Water Treatment Unit." However, screening of the effluent from the storage tanks is not indicated on the plans. This will present a maintenance issue with the lines to the treatment unit if clotting of the blood is permitted in the tanks."

The removal of blood from the slaughtering rooms is essential for the cleanliness of the facility and the health of the slaughterhouse workers and citizens of Basrah. The design deficiencies noted throughout the draft report need to be addressed by GRD to assure the safety of those working at the facility and those who consume its products.

GRD Comments on Construction of Incinerators. GRD disputed the draft report's statement that the SOW required the contractor to construct four incinerators. According to GRD, the official Statement of Work released by the Contracting Office makes no reference to four incinerators and that its review of the official contract files found no reference to 'four' incinerators.

SIGIR Response. SIGIR's review of the signed contract found it required the slaughterhouse facility to include "incinerators." While the SOW provided to SIGIR by the BRO called for four incinerators, the contract clearly required at least two incinerators because it referred to incinerators in the plural. As a result, GRD needs to explain why the contractor is only constructing one incinerator instead of incinerators (plural). In addition, this again confirms SIGIR's conclusion that the contract and SOW were poorly written and confusing. Further, GRD did not dispute SIGIR's determination that the contractor's incinerator design did not identify if the incinerator was for burning garbage or for destroying meat and offal.

GRD Comments on Future Expansion. GRD asserted that the contractor provided for future expansion, as required by the SOW. According to GRD, “Although time restraints limited us from reviewing all drawings for expansion, we noted the contractor accounted for expansion at both the sheep and cattle slaughtering facilities, identified in gray in the drawings. The drawings also reflected expanded electrical capacity.”

SIGIR Response. The BRO-provided contractor drawings did not address future expansion of the slaughterhouse facility. GRD makes reference to what appears to be additional contractor drawings at GRS headquarters. Yet, neither GRD nor GRS headquarters made these contractor drawings available to SIGIR. Consequently, SIGIR cannot comment on the existence or adequacy of this alleged contractor design for future expansion.

In addition, GRD took 16 days to respond to SIGIR’s draft report. Yet, GRD comments that “time restraints limited us [GRD] from reviewing all drawings for expansion.” SIGIR believes that 16 days is more than enough time to review the contractor’s design drawings for the entire project, not simply for the future expansion drawings. For example, SIGIR reviewed the BRO-provided contractor designs and in less than one week’s time, identified the contractor’s significant omissions, deficiencies, and errors documented throughout this report. Further, GRD has been the construction manager for this project since its inception; therefore, SIGIR would expect GRD to have a thorough and comprehensive understanding of the design details of the project. SIGIR does not understand GRD’s apparent need to review the contractor’s designs only as a result of its draft report.

GRD Comments on Equitable Price Adjustment. With regard to equitable price adjustment, GRD stated that SIGIR’s belief that the U.S. government overpaid the contractor for the perimeter fence and site preparation work was incorrect. Specifically, GRD stated that SIGIR relied upon “...old project file documentation...to arrive at their conclusion.”

SIGIR Response – Perimeter Fence. GRS headquarters awarded a firm-fixed-price contract in the amount of \$5,635,000, which included the requirement for 506m of perimeter fence. However, GRD stated that when the project site location changed, the fence was reduced from 506m to 320m. Yet, GRD’s explanation did not address how the elimination of more than 180m of perimeter fence did not result in reduced costs to the contractor. Since the contractor did not have to provide materials and labor for more than 180m of perimeter fence, SIGIR continues to believe the contractor was overpaid for this work.

SIGIR Response – Site Preparation. Further, for the site preparation issue, GRD stated that the original BOQ identified site preparation of 15,877m². However, GRD refers to a July 2008 e-mail where GRS headquarters stated the original BOQ had been removed from the solicitation and replaced with a Proposal Cost Breakdown. According to GRD, the Proposal Cost Breakdown “...makes no reference to the size of the site preparation area.” GRD then concluded that an equitable price adjustment is not necessary. However, the absence of an official reference to the size of the site preparation area is significant. In the original BOQ, the project site preparation was identified as 15,877m²; while the subsequent Proposal Cost Breakdown has no mention of the site preparation area. GRD and GRS representatives agree that the size of the project site lot significantly decreased as a result of a November 2008 contract modification. SIGIR believes that when the project site relocated to a significantly smaller site, the contractor was required to

perform less site preparation work; consequently, the U.S. government overpaid the contractor for site preparation work.

SIGIR Response – Proposal Cost Breakdown. Finally, GRD referred to a July 2008 e-mail from GRS removing the BOQ from the solicitation and a subsequent Proposal Cost Breakdown. However, neither GRD nor GRS provided the e-mail or the Proposal Cost Breakdown for SIGIR's review. Consequently, SIGIR cannot verify the existence or adequacy of either alleged document.

Appendix A. Scope and Methodology

SIGIR performed this project assessment from August 2009 through April 2010 in accordance with the Quality Standards for Inspections issued by the Council of Inspectors General on Integrity and Efficiency. The assessment team included two auditors/inspectors and two engineers/inspectors.

In performing this project assessment, SIGIR:

- Reviewed documentation including: contracts, contract modification, notice to proceed, Statement of Work, and quality assurance/quality control reports;
- Reviewed the design package (plans) and photographs documenting construction progress;
- Interviewed the U.S. Army Corps of Engineers Gulf Region South personnel; and
- Conducted an on-site assessment and documented the results of the Basrah Modern Slaughterhouse project in Basrah, Iraq

Scope Limitation. Due to security concerns, the time allotted for the site visit was approximately one hour. Consequently, SIGIR performed an expedited assessment of the areas available; therefore, a complete review of all work completed was not possible.

Appendix B. Acronyms

BAO	Basrah Area Office
BOQ	Bill of Quantities
BRO	Basrah Resident Office (Formerly the Basrah Area Office)
cm	centimeter
FAR	Federal Acquisition Regulation
GoI	Government of Iraq
GRD	Gulf Region District
GRN	Gulf Region North
km	kilometer
KVA	kilovolt-ampere
m	meter
m ²	square meter
QA	Quality Assurance
QC	Quality Control
PRT	Provincial Reconstruction Team
RLT	Reconnaissance Liaison Team
SIGIR	Special Inspector General for Iraq Reconstruction
SOW	Statement of Work
USACE	U.S. Army Corps of Engineers
USF-I	United States Forces - Iraq

Appendix C. USF-I Approved Comments by GRD on the Draft Report



REPLY TO
ATTENTION OF

CETAG

DEPARTMENT OF THE ARMY
GULF REGION DISTRICT
ARMY CORPS OF ENGINEERS
APO AE 09342



16 April 2010

MEMORANDUM FOR United States Forces - Iraq (J7), APO AE 09342

SUBJECT: Draft SIGIR Audit Report – Basrah Modern Slaughterhouse (SIGIR PA-09-189)

1. This memorandum provides the U.S. Army Corps of Engineers, Gulf Region District response to the subject draft audit report.
2. The Gulf Region District reviewed the subject draft report and partially concurs with recommendation. Gulf Region District, its Southern Area Office and the Basrah Resident Office have provided additional comments for clarity and accuracy in the enclosure.
3. Thank you for the opportunity to review the draft report and provide written comments for incorporation in the final report.
4. If you have any questions, please contact Robert Jones at (540) 678-2996 or via email Robert.A.Jones@usace.army.mil.

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to

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(SIGIR Project PA 09-189)

Overall Comment: Initial customer requirements were for a \$13+ million dollar facility, significantly greater than the amount the National Embassy Team funded. To implement the project, the scope had to be significantly reduced. SIGIR obtained and used documentation from the original requirements. As a result many of their conclusions did not reflect the contract's actual requirements. The final project was awarded for less than half the amount of the original estimate.

Report Comments:

Page 6

SIGIR quotes the statement of work on page six of the report, referencing the conceptual drawings. In their evaluation of the conceptual drawings they state,

"...the SOW lacked a process flow diagram to identify the required building sizes; while the GRS provided two completely different types of slaughterhouse facilities as conceptual designs (Figures 2 and 3). One conceptual drawing indicates one slaughtering building; while the other conceptual drawing showed two slaughtering buildings..."

The resident office provided SIGIR all project documentation which contained two conceptual drawings. However, the Contracting Office at GRS headquarters maintained the official contract file and the set of drawings that were referenced in the solicitation's statement of work. The Contracting Office only issued one conceptual drawing, figure 2 on page seven of the report, with the solicitation. The Contracting Office used the conceptual drawing that illustrated one slaughterhouse building whose dimensions were 15m x 30m.

Page 8

Further, SIGIR's use of unofficial data resulted in their miscalculation of the size of the slaughtering operational area. SIGIR quoted the "Special Instruction" section of the statement of work which read,

...the required facility for this project shall be approximately twice the slaughtering operational area of the buildings indicated on the attached conceptual drawings....

Had SIGIR used the conceptual drawing contained in the official contract and project files, figure 2 on page 7 of the report, their computations would have agreed with the contractor-submitted proposal.

SIGIR further references internet emails between GRS employees it received from the resident office. However, only portions of the emails were quoted in the report and may have been taken out of context. For example, SIGIR's reports the following from an email, "there is confusion regarding what is actually required for the project", but SIGIR omits the remainder of the email which would have provided a frame of reference. The report continues, "three other GRS

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representatives found the contractor's submittals to be significantly less than the contract requirements". The latter statement claiming other representatives found the contractor's submittals to be significantly less than contract requirements did not indicate which requirements the GRS employees were referring.

SIGIR continues to reference emails without a clear chronology, using contract requirements that were not part of the official contract file. For example, in the fifth paragraph on page 8, SIGIR quotes a construction representative,

"the SOW calls for the "operational area" to be twice the dimensions of the conceptual drawings. The dimensions of the conceptual drawings provide for an operational area of 1,728 sq. meters. Your [the contractor's] design shows an operational area of 840 sq. meters. This amount is about half of the area required by the contract."

The report continues, quoting the construction representative,

"In section 4.2.11 of the SOW, it states that the KTR [contractor] shall „provide labor, equipment and material to build the 500m walls of the fence with 24cm...etc." The KTR "s current design requires only 320m of perimeter fence."

The conceptual drawing to which the construction representative was referring was not the conceptual drawing on which the contractor bid. The construction representative referenced an older conceptual drawing (figure 3 on page 7 of the report), not the official drawings. The older conceptual drawing which was never included in the contract contained two slaughterhouses; each measured 14.6m x 29.6m or 432.16m². Using the older conceptual drawing and doubling the operational area, as the statement of work required, would yield an operational area of 1,728.64m² - 2 buildings x (2 x 432.16m²); the area the construction representative noted and SIGIR quoted in its report. However, the official SOW referenced a conceptual drawing with building measurements of 15 m x 30m. The contractor submitted drawings showing two similarly sized buildings which he subsequently built. Based on these facts no equitable adjustment is due for the building size.

The fence requirement in the statement of work was never revised to account for the smaller land area. SIGIR acknowledged in the third paragraph on page 25 of its report that the site location had to be moved because the initial site was in a flood zone. The alternate site was 6,000 m² – 100m x 60m. The resulting perimeter fence would then be reduced to 320m which the contractor realized and brought to the attention of the construction representative.

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In the second paragraph, referring to approval of the contractor's submittals, SIGIR states, "*the project file lacked any analysis or written justification*". The engineering staff at GRS Headquarters conducted the design reviews and approvals for this project. SIGIR, however, did not visit the GRS Headquarters nor did they request from them information pertaining to the project. They visited and requested all their information from the resident office.

In response to the section titled, *GRS Response to the Size of the Facility*, the use of unofficial project files also caused SIGIR to suspect that the government overpaid for site preparation. SIGIR obtained and used old project file information (from the original requirements) to arrive at their conclusion. SIGIR referenced the Bill of Quantities (BOQ) which identified site preparation of 15,877m².

However, in an email dated 22 July 2008, the Chief of Engineering and Construction, GRS, sent the contracting officer an email stating,

"Solicitation has been reworked to remove the BOQ and substitute a Proposal Cost Breakdown.

The Scope of work was revised to reflect the above change and edited to make it clear to the bidders that the slaughterhouse is to be constructed twice the size of the attached concept drawings.

The solicitation did not contain the concept drawings printed one-to-a-page. This set of drawings was previously forwarded but I have attached it again.

Page 3 of the solicitation needs to be revised to remove references to the BOQ and Items No 001 through 0028"

The cost proposal breakdown referenced paragraph 4.2.1, Site Work, in the contract's statement of work. The paragraph makes no reference to the size of the site preparation area, it reads as follows,

4.2 CONSTRUCTION WORK

4.2.1 SITE WORK

□ Testing and commissioning shall include labor, material, tools, testing devices, engineering support in order to support a complete in service transfer of the utilities to the local system in accordance to the appropriate Ministry standards, including any acceptance tests performed by the appropriate Ministry prior to turn-over.

□ Provide labor and equipment to prepare the site for the work, clear and grub, remove 15cm thick of the top soil, level and grade. Work shall include removing all debris to an authorized dump site.

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☐ Provide labor, equipment and material to excavate the soil. Work includes but not limited to, pumping water, curing the soil with anti termite substance treatment.

☐ Provide labor, equipment and material to backfill with sub base type (B) (ASTMD1241-07) at layers of 15cm thick maximum each and compact it to not less than(NLT) 95%MDD.

☐ Provide labor, equipment and material to backfill with clean soil free from organic material, and elevate structure level above road level at layers 15cm thick maximum each and compact it to NLT 95%(MDD) Modified Dry Density.

Had SIGIR requested information from the GRS Headquarters, they would have been aware of the updated contract requirements and supporting documentation.

Page 10

SIGIR noted that the contract contained specific references to contractor-proposed variations from the contract requirements. SIGIR further cites FAR reference 52.236-21 which reads in part,

“(f) If shop drawings show variations from contract requirements, the Contractor shall describe such variations in writing... If the Contracting Officer approves...the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.”

SIGIR also quotes the “General Specifications” of the contract. An excerpt from that section reads,

“The contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal.”

The contractor’s one minor variance from the contract requirements, the fence length, was not only advantageous to the government, but approved by GRS. The contractor submitted via email his rationale for his drawing submittal which depicted a 320m fence. He referenced the statement of work’s requirement for a 6000 square meter sheep and cattle slaughter facility and all the ancillary buildings. The total facility area was 6,000 m² with a fence perimeter of 320m - 100 m x 60 m x 2. The construction representative, in response to his email stated,

“Hello Eng. [XXX]¹,

¹ Contractor name removed from the email to protect their privacy.

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After conferring with our engineering and construction office at great length, we confirmed that your drawings are correct as they are. Sorry for the confusion. Please proceed as planned.”

Further, the building measurements in the conceptual drawing were 15m x 30m; the contractor submittals reflected two 15m x 28m buildings for a total area of 840 m² in compliance with the official statement of work requirements.

The area identified for site preparation was clearly identified. Paragraph 4.2.1 (Site Work) of the contract’s statement of work requires the contractor to,

“Provide labor and equipment to prepare the site for work, clear and grub, remove 15cm thick of the top soil, level and grade...”

Item one (1) on the Solicitation Contract Form clearly states the facility is 6,000 square meters and identifies the buildings of the facility. Item number (1) reads,

“DESIGN/BUILD SLAUGHTERHOUSE IN BASRAH. The contractor shall provide all labor, material, and equipment to design and construct an approximately 6000 square meter sheep and cattle slaughtering facility in Zubayr District, Province of Basrah. The slaughterhouse shall consist of the main slaughtering halls for sheep and cattle, leather shop, incinerators, blood septic/holding tank systems, two guard houses, electrical, mechanical, water and sewerage utilities, walkways and sidewalks, garden area, landscaping, perimeter fence, supply and installation of sheep and cattle slaughtering equipment.”

From the Solicitation Contract Form in the official contract file, it is clearly evident the slaughterhouse facility includes the main slaughterhouse and ancillary buildings which comprise a total of 6,000 m². The contractor did not vary from the statement of work requirements.

Page 11

Sewer Collection System

SIGIR stated in the report that the contractor did not provide sizing calculations for the sewer collection system and did not address the location of blood separation and coagulation system. Our review of the contractor’s water calculations showed the sewer design, wastewater network,

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and storm water network. Drawing P-6 (Washing Water Network) cleared showed the blood separation and coagulation system.

Page 13 Incinerator

Additionally, SIGIR reported the SOW required the contract to “construct four incinerators”. However, the official statement of work released by the Contracting Office makes no reference to four incinerators. Our review of the official contract files found no reference to “four” incinerators.

Page 14 Guard Houses

SIGIR noted the omission of the second guard house on the “Site Power Distribution Plan”. We verified with the construction representative that the contractor is building two guard houses with electricity. GRD will direct the contractor to update his drawings to show the guard house in its power distribution plan.

Future Expansion of the Slaughterhouse

SIGIR asserted that the contractor did not account for future expansion. Although time restraints limited us from reviewing all drawings for expansion, we noted the contractor accounted for expansion at both the sheep and cattle slaughtering facilities, identified in gray in the drawings. The drawings also reflected expanded electrical capacity.

Page 25

Lack of Utilities

It is regrettable that Provincial Reconstruction Team (PRT) and Government of Iraq did not pick a more suitable location with access to public utilities. However, this was not a responsibility of USACE. When the GRS RLT conducted its site survey it recognized and reported the sustainment challenges to GRS. GRS in turn relayed those challenges to the PRT. As the report states, “...the critical issue of no close or known utilities was not addressed.”

Page 26 Electrical Power

SIGIR states in the report, “the contractor’s design submittals did not address the amount of power required to operate the entire facility at full or reduced capacity.” The statement of work required a generator for temporary backup power only. It was not intended to be used to operate the facility at full capacity. Additionally, the contractor provided electrical calculations for each area of the facility,

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for example, the guard houses, mechanical buildings, water treatment building, and powerhouse building.

Page 27

Potable Water

SIGIR's report states, "*The contractor's submittals do not include any calculations for the daily amount of potable water estimated to be required for full operation of the slaughterhouse.*" The contractor provided water calculations; excerpts from their computations follow:

- 100 personnel on site
- Water Consumption person is 1L
- 10 m³ of water per day for human consumption
- 700 animals slaughtered per day
- .2m³ / slaughtered animal

The contractor used the computations to determine the capacity for the reverse osmosis unit.

Conclusion: SIGIR did not use official documentation, but instead used information and documentation from the original plan costing in excess of \$13 million, working level documents and discussions pertaining thereto to perform much of their analysis. This resulted in multiple errors in SIGIR's interpretation of what the contract required. Properly and adequately vetting the information and ensuring that they received official documentation would have provided a more reliable data source than using information from an obsolete plan and working level documentation and resulted in more accurate conclusions.

Recommendation. SIGIR recommends that the Commander, Gulf Region District of the U.S. Army Corps of Engineers, take these actions:

1. Resolve the design deficiencies, omissions, and areas of concern with the contractor to guarantee that the project is adequately designed.
2. Perform a review of the contract file to ensure compliance with all Federal Acquisition Regulation provisions and the terms of the contract.
3. Require the contractor to provide calculations determining: the amount of electrical power and potable water necessary to operate the facility, and the amount of sewer water and blood generated for disposal.
4. Seek equitable price adjustment from the contractor for all de-scoped or modified work performed.

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Response: The Gulf Region District (GRD) partially concurs with SIGIR's recommendation. GRD concurs with part one of the recommendation to resolve design deficiencies and omissions in the 100% design drawings. We will have the contractor revise his submittals to reflect the requirements in the statement of work.

GRD concurs with part two of the recommendation. We agree that any variances and or deviations from the statement of work should be approved by the contracting officer. GRD will modify the contract to reflect the actual requirement to construct a fence for the facility perimeter.

Concerning part three of the recommendation; GRS, now SAO (Southern Area Office), maintained the contractor's calculations, not the resident office. The contractor provided calculations are provided with our response.

GRD does not concur with part four of the recommendation. Though the statement of work was never corrected to reflect 320m of fencing for the new site location, the contractor's submittal and bid was for perimeter fencing for a 6,000m² facility or 320m. Concerning the facility size and site preparation; as previous stated in the comments section, SIGIR used unofficial working documents and information and documents from an obsolete plan. As a result, their computations were not consistent with the official statement of work and solicitation. The slaughtering operational area of the facility is 840 m², approximately twice the size of the conceptual drawing contained in the statement of work. Site preparation was for the complete site facility - 6,000 m²; the amount stated in the solicitation and statement of work. The government is not due an equitable adjustment for the operational area, the site preparation work, or the perimeter fencing, as the contractor complied with the statement of work's requirements.

Appendix D. Report Distribution

Department of State

Secretary of State

Senior Advisor to the Secretary and Coordinator for Iraq

Director of U.S. Foreign Assistance/Administrator, U.S. Agency for
International Development

Director, Office of Iraq Reconstruction

Assistant Secretary for Resource Management/Chief Financial Officer,
Bureau of Resource Management

U.S. Ambassador to Iraq

Director, Iraq Transition Assistance Office

Mission Director-Iraq, U.S. Agency for International Development

Inspector General, Department of State

Department of Defense

Secretary of Defense

Deputy Secretary of Defense

Under Secretary of Defense (Comptroller)/Chief Financial Officer

Deputy Chief Financial Officer

Deputy Comptroller (Program/Budget)

Deputy Assistant Secretary of Defense-Middle East, Office of Policy/International
Security Affairs

Inspector General, Department of Defense

Director, Defense Contract Audit Agency

Director, Defense Finance and Accounting Service

Director, Defense Contract Management Agency

Department of the Army

Assistant Secretary of the Army for Acquisition, Logistics, and Technology

Principal Deputy to the Assistant Secretary of the Army for Acquisition,
Logistics, and Technology

Deputy Assistant Secretary of the Army (Policy and Procurement)

Commanding General, Joint Contracting Command-Iraq/Afghanistan

Assistant Secretary of the Army for Financial Management and Comptroller

Chief of Engineers and Commander, U.S. Army Corps of Engineers

Commanding General, Gulf Region Division

Chief Financial Officer, U.S. Army Corps of Engineers

Auditor General of the Army

U.S. Central Command

Commanding General, Multi-National Force-Iraq

Commanding General, Multi-National Corps-Iraq

Commanding General, Multi-National Security Transition Command-Iraq

Commander, Joint Area Support Group-Central

Other Federal Government Organizations

Director, Office of Management and Budget
Comptroller General of the United States
Inspector General, Department of the Treasury
Inspector General, Department of Commerce
Inspector General, Department of Health and Human Services
Inspector General, U.S. Agency for International Development
President, Overseas Private Investment Corporation
President, U.S. Institute of Peace

Congressional Committees

U.S. Senate

Senate Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Foreign Relations
Senate Committee on Homeland Security and Governmental Affairs

U.S. House of Representatives

House Committee on Appropriations
House Committee on Armed Services
House Committee on Oversight and Government Reform
House Committee on Foreign Affairs

Appendix E. Project Assessment Team Members

The Office of the Assistant Inspector General for Inspections, Office of the Special Inspector General for Iraq Reconstruction, prepared this report. The principal staff members who contributed to the report were:

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